

2024

ANNUAL REPORT

Activity

Research, Development and Innovation (RDI) Area

We transfer knowledge, we transform the future



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

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Introduction



2024, a year of consolidation and strategic promotion in RDI

Through pioneering projects and collaborations with international bodies, the University reinforces its commitment to research that seeks not only to advance knowledge but also to transform society, building bridges between technology, the economy and our well-being. Each initiative is a building block in the foundation of a more sustainable future.

2024, a key period for consolidating the UPC as a leading agent in research, development and innovation in our environment.

Jordi Llorca

Vice-rector for Research
(May 2021 – May 2025)

"In 2024, the UPC positioned itself at the forefront of universities in Spain in terms of raising funds from the Horizon Europe programme."

Climent Molins

Vice-rector for Transfer,
Innovation and Entrepreneurship
(May 2021 – May 2025)

"The UPC is also the Spanish university that filed the most European patent applications."

In 2024, the UPC strengthened its ability to attract competitive funding, especially at the European level, and positioned itself as the top university in Spanish in funds obtained from the Horizon Europe programme, with 55 awarded projects, 20 of which were coordinated by the UPC.

This excellence was recognised with the María de Maeztu certification awarded to the Center for Research in Multiscale Science and Engineering (CCEM) and also extended to the field of transfer and social impact, with the creation of new technology-based companies and mobilised investment of more than 49 million euros. The UPC also stood out in innovation, with a record number of European patent applications and intense scientific activity that engages with sustainability, gender equality and the opening up of knowledge.

The annual report we present includes the activity of the entire UPC research community, with the involvement of schools, research groups, services and support units. With it, we wish to recognise collective effort and share the achievements that bring us ever closer to science that is **open, collaborative and transformative**.



RDI at the UPC

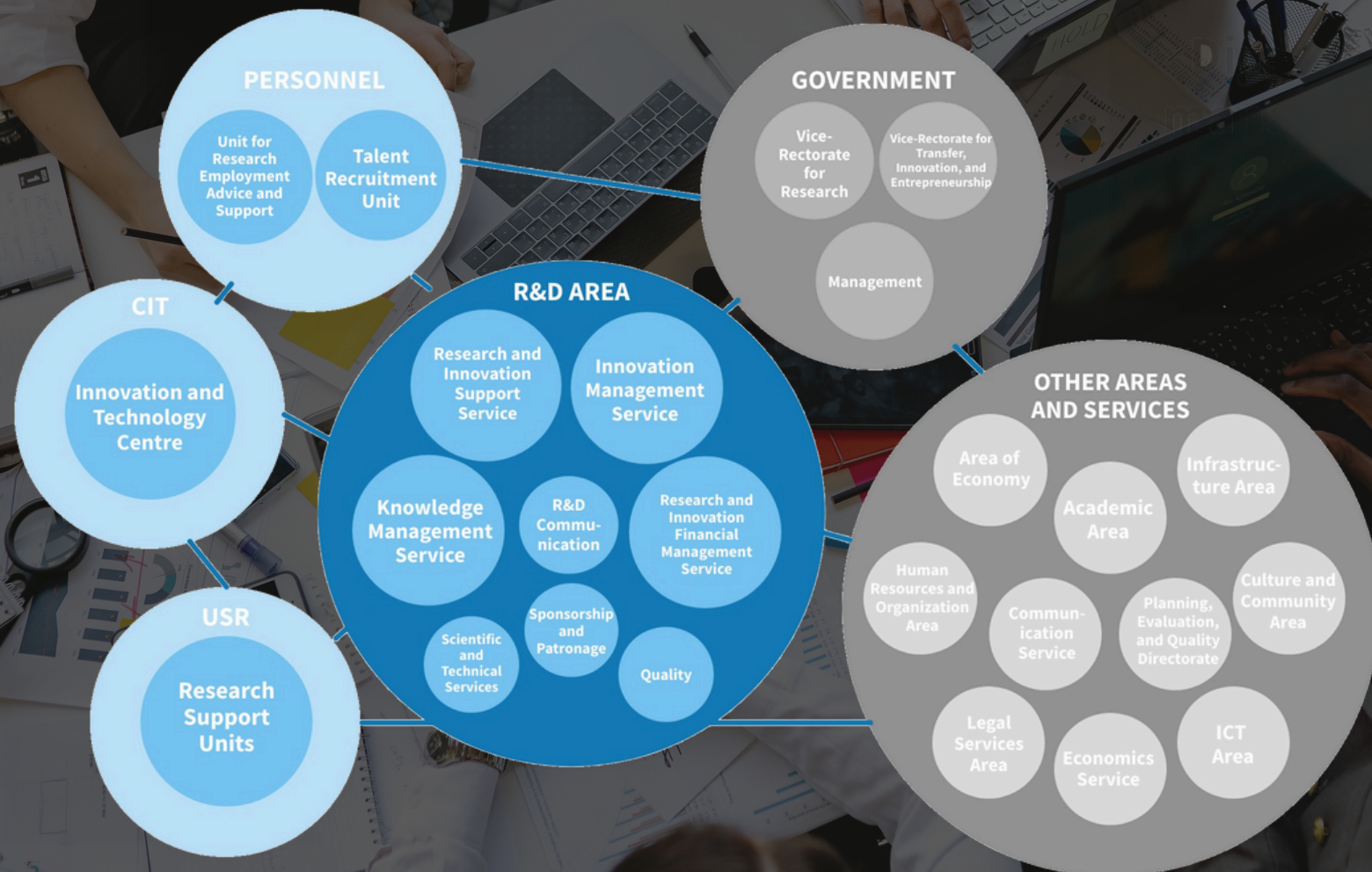


Fostering collaboration and innovation

The Area promotes research, development and innovation by collaborating with teams and following the guidelines of the vice-rectors. With a comprehensive vision, it promotes a scientific and technology ecosystem by implementing innovative practices, identifying opportunities and consolidating synergies that contribute to the sustainable growth of research and knowledge transfer.

People

The staff of the UPC's Research, Development and Innovation Area is distributed among four main services. The management team determines which actions to take, which are then implemented in close collaboration with UPC units and services. The research support units (RSUs) of the management and support units (UTGs) are in charge of interacting directly with teaching staff in schools. The Personnel Service plays a key role thanks to the support lent by its Research Employment Advice and Support Unit (UASLR) and the Talent Recruitment Unit (UCT). In turn, the UPC Technology Centre (CIT) plays a crucial role in disseminating and recognising R&D activities, with the aim of building bridges for collaboration between research groups and companies and institutions in the technology sector.



Value circle

The value circle in RDI starts with identifying needs and opportunities for innovation. This stage is fundamental for detecting areas in which research can have an impact. It is followed by execution, in which actions for developing solutions through research and development are carried out. Once the solutions have been created, transfer involves sharing them with other actors, such as companies and institutions, in order to implement them. Adaptation refers to adapting the solution to specific contexts, while approval involves validating the results. Key performance indicators (KPIs) are used to measure the impact of innovation. Lastly, dissemination, communication and participation are essential in guaranteeing that the results reach the intended audience and citizens in general, establishing ties between new groups and detecting new needs that may be tackled in future projects, starting the value circle anew.





2024 summary



Outstanding achievements in RDI in 2024 at the UPC

In 2024, the UPC's activity in research and innovation was intense, with participation in international competitive projects such as Horizon Europe, Erasmus+ and EIT communities, as well as national, autonomous community and local calls. With a total of 55 awarded projects in Horizon Europe, the University is clearly committed to technological innovation and involved in mixed (public and private) and international collaborations. It has consolidated its leadership in research, development and innovation.

Research and transfer project funding calls

International calls

Horizon Europe

55 awarded projects in 2024, 20 of which were coordinated by the UPC.

- **Pillar I**

4 ERC projects; 12 MSCA projects, of which 6 were coordinated by the UPC and 6 were single-partner projects.

- **Pillar II**

37 projects in the framework of Pillar II. 5 were EU Missions, 2 of which were coordinated by the UPC.

- **Pillar III**

1 European Innovation Council (EIC) project in the framework of European innovation.

- **WIDERA**

Participation in 1 project.

- **KIC**

Participation in EIT Urban Mobility, EIT Raw Materials, EIT Innoenergy and EIT Manufacturing. Preparation of a proposal for EIT Water.

European Institute of Technology

Participation in the proposal for the future EIT Water community with the One Water consortium and key partners. Funding obtained for 3 EIT Urban Mobility innovation projects. Activity in 2 EIT InnoEnergy innovation projects and 5 master's degrees. Involvement in the Thematic Working Groups of EIT Manufacturing and proposal to integrate the UPC master's degree in Mining Engineering into the Master School.

Outside the framework of the Horizon Europe programme

1 RFCS project, 1 project in the 2027 Connecting Europe Facility call, 1 EU Civil Protection Mechanism project and 1 DIGITAL programme project.

ERASMUS+

6 awarded projects.





Convocatorias nacionales

State Research Agency - MICIU

- **María de Maeztu Unit of Excellence**

The Multiscale Centre was accredited as a María de Maeztu Unit of Excellence and received an endowment of almost 3 million euros.

- **Knowledge generation**

Of 128 projects submitted, 62 were awarded a total of 10 million euros.

- **Scientific and technical equipment**

1.6 million euros for equipment for 7 scientific and technical facilities.

- **Mixed public-private collaboration**

4 awarded projects in collaboration with companies, with 654,000 euros for the UPC.

- **International collaborations**

7 European projects funded by the State Research Agency, with 1.2 million euros for the UPC.

- **Strategic lines - Transmissions**

2 awarded proposals with 955,000 euros in funding.

- **Research consolidation**

6 awarded proposals, with an endowment for research of 1.4 million euros.

- **ATRAE programme**

An internationally renowned researcher joined the UPC with an ATRAE grant.

Ministry for Digital Transformation and the Civil Service

- **Chip Chair**

New Chip Chair for advanced architectures and photonic systems.

- **ENIA Chair**

AI chair in energy sustainability for a decarbonised society.

- **5G infrastructure and equipment**

2 grants from PRTR funds in the UNICO I+D 6G programme.

- **Data spaces**

3 awarded projects for an amount exceeding the 4 million euros of PRTR funds.

Autonomous community and local calls

- **Climate change adaptation (AGAUR)**

The AGAUR awarded 574,000 euros in funding to 2 projects.

- **ICREA Acadèmia (AGAUR)**

3 ICREA Acadèmia distinctions awarded in the 2023 call and 5 in the 2024 call.

- **Nuclis R+D 2024 (ACCIÓ)**

27 awarded collaboration projects with a grant of 1.9 million euros for the UPC.

- **Young and Emerging Research (Barcelona City Council)**

6 awarded projects with funding of 715,000 euros.



UPC calls

- AGRUPS 2024
- Impuls UPC
- UPC conferences
- UPC networks and consortia
- ALECTORS 2024
- Grants for preparing proposals for coordinated European research projects.

Contracts and agreements with companies and institutions

- AUSA Center
- GIPS association
- AsoPMR
- Air quality study in the Vallès Oriental
- Collaboration to promote maritime and nautical research

Awards and distinctions

- Awards in RDI areas to members of the UPC community, such as the Creu de Sant Jordi to the researcher Carme Torras, the L'Oréal Award to the researcher María Godoy and the Metropolitan Innovation Prize to the spin-off Virmedex.

Institutional projects

- Creation of the CER-AMA
- Actions in the framework of 2021-2027 RIS3CAT-ERDF
- DIH4CAT
- Creation of the Health Research and Innovation Institute (IRIS)
- New regulations for UPC specific research centres (CERs) and research institutes
- OTC (Research Transfer Office) accreditation
- Gender equality in RDI

Valorisation, protection and transfer

- Valorisation chain
- Contractual agreements and patents
- Portfolio of active spin-offs

RDI networks

- BlueNetCat
- XARTEC Health
- XARFA

Entrepreneurship

- Preincubation
- Acceleration
- 4YFN

Parc UPC



Open science and citizen science

- Fifth UPC Open Science Day and Open Science Award
- Update of the UPC Citizen Science Portal
- Your idea is science!

Chairs

- TAIGUA Chair
- RUMB Chair
- TÜV-SÜD Chair

Philanthropy

- Actions for international fundraising
- CFIS campaign

Connèxia UPC

Ethics Committee

- Actions and training

Scientific and Technical Services

- New service and infrastructure portal
- Open days

RDI information systems

- SAQRA consolidation
- Flux2 in the gRDI tool

Communication

- Social media
- RDI web portal
- RDI on the UPC website
- News
- Internal communication

Futur

- New horizons for 2025

Glossary

- Definition of RDI technical terms and abbreviations



RDI activity indicators



Quantitative RDI data for 2024

The most relevant data on UPC activity in research, development and innovation include general and specific indicators on funding, innovation, management and research output. You can consult the interactive graphs in the web version of the 2024 RDI annual report.

A glance at the RDI indicators for 2024

GENERAL INDICATORS

Revenue

106,2 M€

Proyectos internacionales*
50,3 M€

National projects
€32.6 m

Contracts and services
€14 m

Expenses

83,9 M€

Personal
38,3 M€

Transfers and subsidies
€21.7 m

External services
€8.2 m

Contract revenue

111,4 M€

Proyectos internacionales*
64 M€

National projects
€29.4 m

Contracts and services
€11.4 m

New projects

834

Contratos
414

National
194

International
98

Publications**

4.580

Articulos en revista
2.233

Conference present.
1,395

Doctoral theses
379

RESEARCH OUTPUT

INNOVATION

Technology-based companies

10

Revenue from royalties
€432,062

Priority patents***

23

Licences contracted
3

European patents

17

Investment mobilised
€49.2 m

State entity in Horizon Europe

2nd

Projects substantiated
781

Project applications submitted

870

Requirements met
242

OTHER

* Also includes coordinated projects (revenue that is then redistributed among other project partners).

** The number of publications is increasing as the publications from 2023 are registered in Futur. May 2024 data.

*** A total of 7 patents were also extended through an application for an international patent extension (PCT).

[See the graph explorer](#)





Calls



Leaders in fundraising

In 2024, the UPC consolidated its role in research and innovation projects with significant involvement in Horizon Europe and national calls, reflecting the University's commitment to high-impact research that is aligned with strategic priorities.

Horizon Europe

A university at the forefront of European research

In 2024, the **Universitat Politècnica de Catalunya - BarcelonaTech (UPC)** was awarded a total of 55 research, development and innovation projects in the framework programme **Horizon Europe**, 20 of which were coordinated by the UPC. In total, the UPC received 30.68 million euros across all of the programme's calls and became the leading university in Spain in raising European funds and the second research centre in number of projects after the CSIC, according to data published in **Horizon Europe Dashboard**. These projects cover various areas of knowledge, such as engineering, artificial intelligence, renewable energies, sustainability and digital transformation, and reinforce the UPC's commitment to innovation and scientific and technological progress.

The 20 projects coordinated by the UPC are a reflection **of the institution's capacity for leadership in research and international collaboration** and its promotion of cutting-edge technological solutions with a high impact on society and industry. This funding brings new opportunities for researchers and strengthens synergies with other academic institutions, companies and public bodies.

With these results, **the UPC continues to consolidate itself as a role model in the field of European research** that actively contributes to the strategic objectives of the European Union and the development of innovative technologies to address major global challenges.



El rapte d'Europa, by Juan Oliveira. Navia, Vigo. Myth: Zeus, transformed into a bull, abducts the princess Europa and takes her to Crete, where she becomes the mother of the Minoan civilisation, considered the first great civilisation on the European continent.

Horizon Europe



Marie Skłodowska-Curie Actions (MSCA)

[Marie Skłodowska-Curie Actions \(MSCA\)](#) are a funding subprogramme of the European Commission within Horizon Europe that aims to foster research and innovation through the training, mobility and professional development of researchers.

IDEAL4GREEN project

- PI: **Andreas Sumper**
- UPC budget: **€1.07 m** | Industrial Doctoral Network

The project tackles the challenge of climate change by developing microgrids to manage the variability of renewable energies and achieve carbon neutrality.

CRITERIA project

- PI: **Marc Bascompta Massanes**
- Presupuesto UPC: **755 k€** | Doctoral Network

The project studies the characterisation and treatment of mining waste to recover critical materials, foster the reuse of soil and environmental remediation, and evaluate the ecological and social impact of the process.

TAILOR project

- PI: **Josep Maria Font Llagunes**
- UPC budget: **€335,000** | Doctoral Network

The project integrates artificial intelligence and robotics to personalise neuromotor rehabilitation and improve the effectiveness and adaptability of treatments to optimise patient recovery.

SOLIS project

- PI: **Zacharie Jehl**
- UPC budget: **€257,000** | Doctoral Network

The SOLIS project investigates inorganic photovoltaic materials to develop artificial visual synapses in neuromorphic computing. It fosters collaboration and open science, and contributes to European leadership in artificial intelligence.

European Research Council (ERC)

An institution of the European Commission that funds [excellence in research](#). It supports outstanding researchers who develop innovative and high-risk projects with high impact.

SCLIT project

- PI: **Albert Guillén Fàbregas**
- UPC budget: **€1.5 m** | ERC-ADG call

The project redefines the concept of rhythm in information theory and studies new scales of growth and probability of error to improve wireless communications.

UTILE project

- PI: **David Escofet-Martín**
- UPC budget: **€1.49 m** | ERC Starting Grants call

The project develops advanced laser techniques for measuring heat transfer in fires to improve the accuracy of models for fire safety and prevention.

Horizon Europe

EWiC project

- PI: **Sergi Abadal Cavallé**
- UPC budget: **€115,000** | ERC Proof of Concept call

The WINC project proposes a revolution in the architecture of computing systems by integrating wireless communications within chips. Using terahertz technology, it seeks to overcome current speed and efficiency limits in classical and quantum systems. The goal is to develop innovative antennas, protocols and architectures that allow much faster internal communications and thus unlock future progress in computing. This proof of concept continues the research initiated in the [WINC project](#).

UNIDACT project

- PI: **Albert Guillén Fàbregas**
- UPC budget: **€76,000** | ERC Proof of Concept call

The [ITUL](#) project introduced a universal algorithm for data compression based on circular context trees. This algorithm demonstrated superior performance over commercial methods such as ZIP and BZIP and advanced algorithms such as PPM and CTW. Building on this success, the new UNIDACT project aims to extend the current binary implementation to support arbitrary alphabets. The project focuses on developing efficient implementations of encoders and decoders, as well as creating specialised applications, for compressing satellite observation data and genomic information.

More coordinated projects

In the framework of the Horizon Europe programme

BLOOM project

- PI: **Josep Oliva Moncunill**
- UPC budget: **€3.06 m** | Cluster 4

BLOOM develops extraction and processing technologies using AI and modular analysis techniques to improve access to critical materials, reduce the EU's dependence and increase efficiency in raw material recovery.

QUEEN project

- PI: **Josep Oliva Moncunill**
- UPC budget: **€2.06 m** | Cluster 4

The QUEEN project seeks to sustainably produce metallurgical-grade silicon (MG-Si) from sand from European quarries to reduce the EU's dependence on external sources such as China. The aim is to cover 56% of EU demand for MG-Si in 2032 and reduce CO2 emissions at the same time.

STOR-HY project

- PI: **Alexandre Presas Batlo**
- UPC budget: **€1.21 m** | Cluster 5

STOR-HY improves the efficiency and sustainability of pumped-storage plants using digital tools, sensors and predictive maintenance to reduce costs, extend the useful life of components and prevent unexpected interruptions. In addition, it optimises the operational management and flexibility of the European electricity system and strengthens the integration of renewable energies and the resilience of the grid to the effects of climate change.

Horizon Europe

■ COAST-SCAPES project

- PI: **Manel Grifoll**
- UPC budget: **€1.22 m** | EU Missions: Climate change

The COAST-SCAPES project, funded with 8.92 million euros by the European Union within the climate change adaptation mission, aims to develop innovative systemic solutions to improve the resilience of coastal areas to the increasing impacts of climate change. Led by the Universitat Politècnica de Catalunya (UPC), the project brings together 24 partners from across the European Union, including its outermost regions, to work together on sustainable interventions that connect the territory from land to sea.

■ DISCOVER project

- PI: **Maria de La Vega Pérez Gracia**
- UPC budget: **€1.21 m** | Cluster 4

The DISCOVER project is developing an autonomous and intelligent system to identify and analyse materials on construction sites at the end of their useful life, improve the efficiency of deconstruction and promote the circular economy in the construction sector. Using robotics, artificial intelligence and BIM tools, the system scans buildings, detects materials, analyses their properties and creates digital twins to optimise the reuse of components and minimise waste. This enables the supply of sustainable materials to be increased, the environmental impact to be reduced and resources to be more easily traceable, and contributes to more efficient and ecological construction.

■ SEAMPHONI project

- PI: **Michel André**
- UPC budget: **€1.01 m** | EU Missions: Oceans

Led by the Universitat Politècnica de Catalunya (UPC), it has 23 other partners from across the EU, including the outermost European regions. The project aims to promote deep-sea research in the Portuguese archipelago of Madeira.

■ GridForLoads project

- PI: **Oriol Gomis Bellmunt**
- UPC budget: **€647,000** | Cluster 5

This project seeks to transform current electrical systems to allow loads (and not just generation) to contribute to the stability of the grid. It develops the concept of grid-forming loads to facilitate the maximum use of renewables, such as solar and wind, and maintain system stability. It includes controllers, practical applications and technical, economic and environmental studies.

■ RENOVATE project

- PI: **Emilio Gil Moya**
- UPC budget: **€428,000** | Cluster 6

The RENOVATE project is developing an innovative platform to facilitate the exchange of practical knowledge between farmers and foresters. Through gamified content and training tools, it will promote sustainable crop management and the adoption of innovations in plant protection. With 16 partners from 8 countries, the project will be aligned with the European Green Deal and common agricultural policy, and will act as a training benchmark at a local and national level.

Knowledge and innovation communities

EIT Urban Mobility



In the framework of EIT Urban Mobility, the UPC obtained funding for three new innovation projects, which consolidate its presence in the field. In addition, it maintained its activity in key training initiatives such as the Doctoral Training Network, the Master School and other programmes linked to the Academy, which reaffirmed its commitment to training and research in urban mobility.

EIT Manufacturing



The UPC actively participated in the Thematic Working Groups, in which it addressed topics such as renewable energies and the net-zero industry. It was also present at the online Matchmaking Event on 29 and 30 April, which was an opportunity to promote new proposals within the KIC's calls. The proposal for the UPC master's degree in Mining Engineering to join the Master School of EIT Manufacturing was designed and submitted.

EIT Water



In 2024, the UPC continued to coordinate the national ecosystem to integrate into the One Water consortium and present the proposal for the future EIT Water, Marine and Maritime Community, an initiative of the European Institute of Innovation and Technology within its 2021-2027 strategy. This new KIC aims to address challenges such as water scarcity, droughts, floods and the degradation of aquatic ecosystems; foster innovation; and strengthen the European blue economy. Within this framework, the UPC secured the participation of VEOLIA, ESADE, the Port of Barcelona and IH Cantabria, and initiated talks to expand the base of strategic collaborators.

EIT InnoEnergy



In the framework of EIT InnoEnergy, the UPC participated in two innovation projects, which reinforces its role in the sustainable energy sector. In addition, it continued to promote the training of highly qualified talent through its involvement in five master's programmes, to contribute to the specialisation of professionals in the field of energy and ecological transition.

[See the training available](#)



More international RDI



■ SHELL-CRACK project

- PI: **Jessica Calvo**
- UPC budget: **€151,300** | RESEARCH PROGRAMME OF THE RESEARCH FUND FOR COAL AND STEEL (RFCS) call

The SHELL-CRACK project focuses on preventing cracks during the continuous casting process of metals. It is developing a new methodology that integrates material properties and process parameters. Through advanced sensors and on-site testing, key variables are monitored to understand and prevent the formation of defects.

■ 23-ES-TG-DS4MOBMODELS project

- PI: **Lidia Montero**
- UPC budget: **€150,000** | 2027 Connecting Europe Facility call

The project seeks to create an advanced mobility data space that integrates transport, traffic and travel data in several regions, including Spain, the Euroregion Nouvelle-Aquitaine Euskadi Navarra and Central Portugal. The aim is to improve the availability, quality and interoperability of data for sustainable urban mobility and efficient traffic management. It will also develop a data platform with robust governance to facilitate secure and equitable access to all stakeholders.

■ INLINE project

- PI: **Marc Berenguer**
 - UPC budget: **€304,000** | EU Civil Protection Mechanism
- Coordinated by the UPC, the INLINE project seeks to improve the forecasting of impacts caused by storms and floods in Europe to support decision making in emergency management. It uses artificial intelligence to increase the accuracy and timeliness of predictions and develops a configurable local alert system for civil protection agencies. The tools will be validated in real time for 15 months, including a cross-border pilot between Portugal and Spain. A community of interest will also be created of users in different fields and the integration of the results into the European Flood Awareness System (EFAS) will be promoted to guarantee its continuity.

■ E-MED project

- PI: **Miquel Estrada**
- UPC budget: **€329,800** | INTERREG call

The E-MED project, coordinated by the UPC, aims to test and validate solutions to improve energy efficiency and resource use in public transport systems, reduce their environmental impact and adapt to the volatility of energy prices resulting from the current crisis. This challenge mainly affects local authorities, transport infrastructure, energy suppliers and electric vehicle manufacturers.

State Plan for Scientific and Technical Research and Innovation (PEICTI)

State Research Agency



Fact: María de Maeztu, a Philosophy and Arts graduate of the Central University of Madrid, was one of the first women to be awarded a university degree at a time when women's access to higher education was very limited in Spain. Seven years later, she founded the well-known Residencia de Señoritas, a pioneering initiative that allowed women to access quality higher education in fields such as philosophy, sciences and the arts.

María de Maeztu distinction

On 5 September, the [Barcelona Research Center in Multiscale Science and Engineering \(CCEM\)](#) of the UPC [was distinguished as a María de Maeztu Unit of Excellence](#) by the State Research Agency. This distinction has an endowment of almost 3 million euros, which will be used to promote programmes aimed at consolidating the Center's scientific capabilities, increasing its international reach and promoting talent recruitment and retention.

Knowledge generation

Through the call [Knowledge Generation Projects](#), the State Research Agency funds research projects aimed at promoting the generation of scientific knowledge and progress towards the search for solutions to society's challenges. In the 2023 call **62 UPC projects** were awarded a total of almost 10 million euros in funding. With respect to the **128** proposals submitted, the success rate was about **48%**.

Scientific and technical equipment

The aim of the [call](#) is to provide bodies' common research services with scientific and technological infrastructure that contributes to creating an internationally competitive R&D ecosystem. Funding was awarded for **7 scientific and technical facilities** of the UPC, with a total subsidy of **1.6 million euros**. This funding covers 50% of the total cost of the equipment.

State Plan for Scientific and Technical Research and Innovation (PEICTI)

State Research Agency

Projects in strategic lines

The initiative is being implemented by the Centre for Technological Development and Innovation (CDTI) and the State Research Agency, with the aim of encouraging collaboration between public and private groups and promoting projects with a substantial scientific, technological and economic impact. In the framework of the call [Transmissions 2024](#), two projects were awarded €955,000 in funding for the UPC.

CASANDRA project

- PI: **Carles Domenech** | UPC budget: **€606,000**

CASANDRA aims to promote environmental sustainability by introducing digital, advanced and modular manufacturing processes in key EU sectors such as the metallurgical, energy and naval sectors. Project in collaboration with 8 companies and 5 research bodies, in which the [CDEI-UPC](#) participates.

COMECOCO2 project

- PI: **Jordi Llorca** | UPC budget: **€349,000**

The COMECOCO2 project aims to validate an efficient, competitive renewable methanol production system based on high-temperature co-electrolysis with technology entirely manufactured in Spain that has applications in maritime transport. Project in collaboration with 7 companies and 6 research bodies, in which the UPC's [NEMEN](#) research group participates.



International collaborations

The State Research Agency funds Spanish entities that have successfully participated in competitive international calls that are the object of bilateral research and innovation programme agreements that require national funding. In 2024, the UPC obtained 1.4 million euros in funding for 7 projects in [PCI2024-1](#) and [PCI2024-2](#) calls. This includes 2 projects in the [bilateral Spanish-German call](#).

Public-private collaborations

The UPC also participates in national projects in collaboration with companies, with the aim of promoting the development of new technologies and the business application of new ideas and techniques and contributing to the creation of new products and services. In the State Research Agency's call [Public-private collaboration 2023](#), 4 projects were awarded a total amount of €654,000.

Research consolidation

Calls for applications for grants that foster the consolidation of researchers' professional careers within the [Spanish Science, Technology and Innovation System \(SECTI\)](#). In the [2023 call](#), 6 proposals were awarded to the researchers Maria del Mar Pérez and Jezabel Curbelo and the researchers Marcel Placidi, Farayde Matta, Josep Maria Guerrero and Marco Gualteri, with a total endowment for research of 1.4 million euros.

Recovery, Transformation and Resilience Plan (PRTR)

Ministry for Digital Transformation and the Civil Service



Fact: By the end of 2024, Spain had mobilised more than 81.8 billion euros from the Recovery, Transformation and Resilience Plan, and had consolidated itself as the European Union country that has executed the most funds from the NextGenerationEU programme.

PERTE Chip

The PERTE CHIP (Strategic Project for Economic Recovery and Transformation in Microelectronics and Semiconductors) is an initiative of the Spanish government with a planned investment of up to 12,250 million euros until 2027. Its objective is to boost national capacity in chip design and manufacturing, encourage international investment, strengthen the Spanish R&D ecosystem and guarantee strategic autonomy in key technologies. In 2024 the UPC received 1.1 million euros for 5 innovation projects, in addition to the PERTE CHIP funds received for the Chip Chair.

Chairs and business collaboration

A highlight of 2024 was the creation of university-business chairs with PRTR funds in innovative areas such as artificial intelligence and semiconductors. These initiatives show the UPC's commitment to technological progress and industrial collaboration.

ENIA Chair: energy sustainability for a decarbonised society

- PI: **Cecilio Angulo Bahón**

The proposal for a [new AI chair in energy sustainability for a decarbonised society](#) was accepted. The Chair will promote innovation and research activities in the fields of data analysis and artificial intelligence. The project is led by the UPC with the participation and contribution of the company Siemens Energy SA. Provision of almost **670,000** euros from PRTR funds.

Chip Chair: Advanced Architectures and Photonic Systems

- PI: **José Antonio Rubio Sola**

In May 2024, the [Chair of Advanced Architectures and Photonic Systems](#), the [Chip Chair](#) was set up to form and attract talent with the aim of strengthening scientific, design and production capabilities of the chip and semiconductor industry. The [BSC](#), the [ICFO](#) and 13 companies collaborate in the Chair. Classed in the area of **PERTE CHIP**, the funding with PRTR funds is 3.8 million euros.

Recovery, Transformation and Resilience Plan (PRTR)

Ministry for Digital Transformation and the Civil Service

5G infrastructure and equipment

The UPC [received two grants worth more than 2.8 million euros](#) from PRTR funds within the framework of the [UNICO I+D 6G](#) programme, which covers the award of public funding for research infrastructure and the acquisition of scientific and technical equipment needed for advanced 5G and 6G technologies.

■ Evolution of infrastructure (ultra-low latency) and expanded mobile system (mmWave) towards 6G-IA networks

- PI: **José Antonio Lázaro Villa** and **Anna Umbert Juliana**
- UPC budget: **€2 m**

Implementation of a scientific infrastructure towards 6G, with ultra-low latency, to expand the network in the millimetre wave spectrum area up to 26 GHz.

■ Advanced laboratory for prototyping and integration of circuits, devices and antennas at sub-THz frequencies

- PI: **Jordi Romeu Robert**
- UPC budget: **€825,000**

This laboratory will improve the manufacturing and prototyping capacity of radio frequency circuits and enable the assembly and verification of circuits for applications at frequencies below THz.

Data spaces

The aim of the programme [Demonstrators and Use Cases of Data Spaces](#) is to foster the creation and development of data spaces in strategic sectors such as agri-food and mobility. The Ministry for Digital Transformation and the Civil Service awarded funding from PRTR funds to the **three proposals** presented, the total amount of which exceeds **4 million euros**.

■ Agrixels_ES project

- PI: **Cecilio Angulo** | UPC budget: **€2.4 m**

Agrixel defines two use cases in the agri-food sector. The first considers farms' climate and environmental sustainability, while the second is oriented towards the carbon market.

■ UPCxels project

- PI: **Alberto Cabellos** | UPC budget: **€934,000**

UPCxels is conceived as an open and multisector platform with the aim of creating a shared data space for different areas, with an emphasis on the agri-food sector.

■ i-MovE project

- PI: **Miquel Àngel Estrada** | UPC budget: **€707,000**

i-MovE seeks to unify multisector data (from both public and private sectors) to increase the accuracy of information from the mobility sector and create use cases using the UPCxels demonstrator.

Agency for the Management of University and Research Grants (AGAUR)



Susqueda dam, Girona

Aged just 26, the architect Arturo Rebollo designed and later directed the construction of the unique Susqueda dam in 1963. The dam is now considered industrial heritage whose value is incalculable, and it hides numerous architectural design secrets that make it unique in the world.

Mitigating and adapting to climate change

Call for applications for grants to fund research and knowledge transfer projects with the aim of analysing the impact of climate change on the natural systems and social, economic and geographical areas of Catalonia. In early 2024, the AGAUR awarded 574,000 euros in funding to two UPC projects.

■ WEF4Build project

- PI: **Miquel Casals Casanova**
- UPC budget: **€350,000**

WEF4Build promotes the use of building roofs to improve climate resilience through solutions in the water-food-energy nexus. The project combines hydroponic agriculture, agrivoltaics (solar panels above crops) and integrated greenhouses to reduce emissions and move towards more sustainable and liveable cities.

■ URBANAT project

- PI: **Ivette Rodríguez Pérez**
- UPC budget: **€224,000**

URBANAT will create a digital twin of Barcelona to predict thermal stress and air pollution. The project will offer reliable predictions in real time. It will also evaluate nature-based solutions to reduce the urban heat island (UHI) effect.

Agency for the Management of University and Research Grants (AGAUR)

Knowledge industry

49 projects were submitted in 2023 (€5,056,244.53 applied for) and a total of 13 projects were definitively awarded €1,271,273.35 in total.

57 projects were submitted in 2024 (€4,587,117.28 applied for) and a total of 20 projects were definitively awarded €1,559,417.27 in total in 2024.

Llavor 2023 (awarded in 2024)

- Applied for: 11
- Awarded: 2

Llavor 2024

- Applied for: 26
- Awarded: 8

Internally, the UPC awards Llavor UPC grants to projects that have been given high scores in the AGAUR call, with a fixed contribution of €12,500 (excluding VAT) per project. **In 2024, 9 grants were awarded to selected projects in this category.**

Producte 2023 (awarded in 2024)

- Applied for: 29
- Awarded: 8

Producte 2024

- Applied for: 26
- Awarded: 9

Internally, the UPC awards Producte UPC grants to projects that have been given high scores in the AGAUR call, with a fixed contribution of €50,000 (excluding VAT) per project. In 2024, 4 grants were awarded to selected projects in this category.

Innovadors 2023 (awarded in 2024)

- Applied for: 9
- Awarded: 3

Producte 2023 (awarded in 2024)

- Applied for: 5
- Awarded: 3

ACCIÓ - Agency for Business Competitiveness



Nuclis R+D 2024

In ACCIÓ's [NUCLIS R+D 2024](#) calls, the UPC obtained 1.9 million euros in funding for 22 collaborative projects. These projects are carried out between local companies and TECNIO centres, with the aim of supporting industrial research and experimental development in Catalonia.

Nuclis R+D Genèric

Of the Nuclis RD Genèric type, **31 proposals** were submitted, with a budget of **2.8 million euros**, of which **16** were granted and awarded **1.4 million euros**.

Nuclis R+D Green Canvi Climàtic

Of the Green Canvi Climàtic type, **7 projects** were submitted, with a total budget of **634,000 euros**. The UPC secured **200,000 euros** in funding for **2 projects**.

Nuclis R+D Green Residus

Of the Green Residus type, **6 proposals** were submitted, with a budget of **500,000 euros**. A total of **275,000 euros** in funding was awarded to **4 projects**.

Strengthening Competitiveness

[A call for applications](#) aimed at financing collaborative projects related to initiatives to strengthen the competitiveness of the bodies that make up the [Catalunya Clústers](#) programme. In 2024, the UPC participated in **4 proposals** for an amount of **88,000 euros**. Funding was secured for **3** of these proposals for an amount of **66,000 euros**.

More national, autonomous community and local RDI

■ Desxifrant el canvi climàtic project



- PI: **Jezabel Curbelo**
- Call: [2024 Life and Material Sciences Research Grants](#)
- Budget: **€152,000**

Deciphering Climate Change: Lagrangian Coherent Structures in Atmospheric and Oceanic Flows as Indicators.

■ RADON_MASK project



- PI: **Claudia Grossi**
- Call: [2024 RDI grants](#)
- Budget: **€97,164**

Evaluation of the retention efficiency of radon descendants of self-filtering masks.

■ LINDA project



- PI: **Miquel Ferriol**
- Call: [2024 Icapem grants](#)
- Budget: **€20,000**

Research into the profile associated with women with lung cancer by creating a digital twin.

■ Challenges and solutions for advanced water resource management in the Besòs basin



- PI: **Daniel Fernández**
- Call: [Prismas y Problemas](#)
- Budget: **€279,872**

■ Water purification with catalytically active hydroxyapatite



- PI: **Carlos Alemán**
- Call: [Prismas y Problemas](#)
- Budget: **€93,896**

■ Cost-effective monitoring systems for improved operation of renewable energies



- PI: **David Valentín**
- Call: [2024 Leonardo grants](#)
- Budget: **€37,000**

■ Expansion of underwater communication capabilities on marine monitoring platforms with pop-up buoys



- PI: **Matias Carandell**
- Call: [2024 Leonardo grants](#)
- Budget: **€39,000**

More national, autonomous community and local RDI

Water management



Grants for RDI projects in water management and the preservation and improvement of the aquatic environment and smart specialisation projects related to flood risk. In the [2024 call](#), **14 proposals** were submitted, totalling **1.3 million euros**.

Demonstrations



Call aimed at supporting the transfer of knowledge adapted to the territorial and sectoral realities of the agri-food and forestry sector through demonstration activities in Catalonia. In the [2024 call](#) the Ministry of Climate Action, Food and Rural Agenda awarded **6 projects** a total of **€306,000**.

Gender equality



Call by the Ministry of Equality and Feminism for proposals for [research projects in the field of gender equality and feminisms](#). The UPC submitted **5 proposals** totalling **€244,000**.

Young and Emerging Research



Grants for scientific research and knowledge transfer projects to support emerging scientific research. In the [2024 call](#) the City Council granted **€715,000** in funding to the UPC for work on **6 projects**.

RECLAM project

- PI: **Carme Barba**
- UPC budget: **€169,122**

Quality challenges and nature-based solutions for the use and reuse of the water resources of the Besòs: maximising sustainability.

BARCELONA BASES project

- PI: **Margarita Martínez**
- UPC budget: **€147,645**

The project aims to promote active mobility for a sustainable and equitable society.

UVIS SCREENING project

- PI: **Carles Otero**
- UPC budget: **€100,000**

Digital, multitest and low-cost platform for vision screening in the paediatric and adult population.

UPC calls



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

The Universitat Politècnica de Catalunya continues to provide support and grants aimed at promoting research, development and innovation.

AGRUPS 2024

With a budget of 1.4 million euros, this call aims to boost the activity of UPC research groups. This section is notable for its direct and substantial support of research groups, recognising their innovative activities and encouraging their continuity.

Impuls UPC

The Impuls UPC (entrepreneurial talent and start-ups) calls aim to promote entrepreneurship among UPC students and alumni. With endowments of 30,000 and 60,000 euros respectively, these initiatives support the creation of new companies to boost the University's entrepreneurial ecosystem and the territory's economic development.

Grants for preparing proposals for coordinated European research projects

Encourage the active participation of UPC teaching and research staff in international RDI projects. The review of 6 proposals was funded with resources from the PROMETHEU programme and the budget of the Office of Vice-Rector for Research.

UPC conferences

The main objective of the programme is to promote the holding of scientific conferences organised by UPC teaching and research staff and to contribute to improving the quality and ensuring the success of these conferences. The aim is to encourage renowned professors and researchers to participate, and to foster a framework that is conducive to debate and the exchange of ideas. The financial endowment of this initiative was 20,000 euros.

UPC networks and consortia

This programme promotes the UPC's active participation in national and international networks and consortia, which, due to their high level of quality and scientific interest, play a prominent role in transfer and innovation processes and contribute to extending the institution's reach. In 2023 the financial endowment for this support was 30,000 euros.

ALECTORS 2024

UPC grant programme to support its assistant professors and promote their research activity during their first year at the University. In the last year, 73 new professors joined the UPC in this capacity. Since the start of the programme in 2023, 800,000 euros have been allocated to fund this initiative.



Contracts and agreements with companies and institutions

AUSA Center

Contract signed by the UPC through the [CDEI \(Industrial Equipment Design Centre\)](#) and [AUSA Center](#), a leading company in the manufacture of compact equipment for transporting and handling materials. The object of the contract consists of an R&D project aimed at offering support for the design of public works machinery. The project's budget is €228,540 and the duration is one year.

Interdisciplinary Group of Health-Related Professionals (GIPS)

Agreement with the [Interdisciplinary Group of Health-Related Professionals \(GIPS\)](#), an association of professionals from a range of disciplines who work in the field of health with the aim of promoting cross-disciplinary collaboration in clinical, technological and research innovation projects. The agreement's main objectives are to promote research projects, cooperate in training programmes and raise awareness of the challenges posed by the incorporation of technology in the healthcare field.

Association of People with Reduced Mobility (AsoPMR)

Contract signed between the Universitat Politècnica de Catalunya (UPC), through the [inLab FIB](#), and the [Association of People with Reduced Mobility \(AsoPMR\)](#) for participation in the [Spot4Dis](#) project. This project aims to automatically map parking spaces for people with disabilities. The UPC's contribution focuses on technological development, specifically on creating an image processing and machine learning module for identifying these reserved parking spaces.



Strategic collaboration between the UPC, Barcelona City Council and the Catalan government to promote maritime and nautical research

Work is under way on the future project of the [Barcelona Maritime Technology Park](#), for which the UPC and the [El Far](#) consortium established a strategic collaboration with the aim of making Barcelona an international benchmark in the field of maritime and nautical research.

This initiative is part of the creation of the Barcelona Mar Chair, a platform aimed at promoting innovation, training and sustainable development in a key sector for the city. Its lines of action include the development of high-impact research projects, specialised training for professionals in the sector and the transfer of knowledge to companies and institutions.

The Chair plans to begin its activities over the course of 2025, with a series of projects that include studies on renewable energies applied to nautical activities, the digitalisation of maritime processes and environmental sustainability in the sector. Debates and practical workshops are also planned to promote the participation of professionals and students.

Air quality study in the Vallès Oriental

The town councils of La Llagosta, Mollet del Vallès and Santa Perpètua de Mogoda commissioned a study by the UPC's [Environment Centre Laboratory \(LCMA\)](#) to study air quality in this area.

The agreement signed between the three councils and the UPC will allow a study of air quality until 2028 through an innovative sensor network system for identifying and quantifying the chemical families of volatile organic pollutants (VOCs). The study, which will be carried out by the UPC's [Environment Centre Laboratory](#), will begin in October and will last four years. The project has a budget of 298,950 euros, divided equally among the three municipal corporations.



Erasmus +



■ EduWaterLab project

- PI: **Benjamino Russo**
- Call: associations for cooperation in higher education
- UPC budget: **€129,300**

EduWaterLab is a project led by the UPC that promotes innovative teaching of hydrology and hydraulics through shared experiments and active learning between four European universities, with the aim of reinforcing basic understanding of water processes and expanding teaching capacity.

■ UPTAKERS project

- PI: **Marta Fairén**
- Call: capacity development in higher education
- UPC budget: **€71,300**

UPTAKERS is an Erasmus project (2024-2027) that drives the digital transformation of higher education through the use of extended reality (XR), with the aim of reducing the gap between graduates' skills and market needs. Coordinated by Ovidius University of Constanța, it brings together 10 universities from Europe and the MENA region to create inclusive hybrid spaces, develop digital courses and workshops, and foster entrepreneurship and innovation.

■ TWOPAC project

- PI: **Eva Gallardo**
- Call: associations for cooperation in higher education
- UPC budget: **€54,600**

TWOPAC is a European project that improves the practical skills of master's students in occupational psychology through the use of assessment reports and innovative teaching materials on key topics such as talent management, job analysis and psychological risks. It will create a digital toolbox for teachers and experiment with new training formats.

Awards and distinctions for research, development and innovation

For Women in Science Award

The L'Oréal-UNESCO For Women in Science programme recognised [María Godoy](#), from the UPC's [Biomaterials, Biomechanics and Tissue Engineering Group](#) (BBT) for her work on the project 'Smart biomaterials sensitive to external stimuli to enhance tissue integration and antibacterial properties (BioSmart)'. The 15,000-euro prize, which was also awarded to four other researchers, aims to highlight female leadership in the scientific field in Spain.



ICREA Acadèmia



The [ICREA Acadèmia](#) programme has been promoting and rewarding the research excellence of Catalan public universities since 2008. It contributes to intensifying research by researchers who are in an active, expansive stage of their careers. The grants, of 120,000 euros, allow them to intensify their pursuit of excellence over a period of five years; additionally, they receive a personal award of 80,000 euros.

At the beginning of 2024, the researcher [Maria Pau Ginebra](#) and the researchers [Eduard Alarcon](#) and [Albert de la Fuente](#) were distinguished with the 2023 ICREA Acadèmia distinction. At the end of the year, the 2024 call, managed for the first time by the AGAUR, recognised the work of a total of 50 professors in the Catalan university system, including five scientists from the UPC: [Elaine Armelin](#), [Oriol Gomis](#), [Antonio González](#), [Luca Pelà](#) and [Josep Lluís Tamarit](#). See the [UPC press release](#).

ATRAE programme

The researcher Audrey Sawyer will join the UPC thanks to the help of the [ATRAE programme](#), which facilitates the incorporation of consolidated research talent with recognised international prestige, supporting their careers and stimulating top-level research. The recognition includes a grant of almost 1 million euros, which will be used both for her recruitment and to cover the costs of executing a research project.

Awards and distinctions for research, development and innovation



More awards and distinctions

■ Creu de Sant Jordi and Manel Xifra i Boada Award

Researcher: Carme Torras

Distinction: for her career in robotics and artificial intelligence.

■ Metropolitan Innovation Awards

Spin-off: Virmedex

Distinction: for the best business initiative led by women.

■ UPC Open Science Award

Researcher: Yolanda Vidal

Distinction: for initiatives and projects that have made a substantial contribution to open science at the UPC.

■ Barcelona City Council and La Caixa Foundation

Projects: FRAILWATCH and BotNet

Distinction: for tackling new urban challenges.

■ Triple recognition by Mexican institutions

Researcher: Zaida Muxí

Distinctions: Jorge Camber Garibi Urban Merit Medal, University of Guadalajara; maximum recognition from the National Autonomous University of Mexico, and incorporation as a distinguished professor at the Monterrey School of Architecture, Art and Technological Design.

■ Ángela Ruiz Robles Award

Researcher: Núria Castell

Distinction: for her professional career.

■ 17th Gaudí Gresol Award

Researcher: Montserrat Guàrdia

Distinction: for renown and excellence.

■ Gauss Chair and 2024 STEM Woman Award

Researcher: Eva Miranda

Distinction: chair awarded by the Göttingen Academy of Sciences and Humanities and STEM Woman Award for promoting female talent.



Highlighted activity



Boosting the impact of research, transfer and innovation

The UPC is committed to research that has an impact and aims to generate innovative solutions to current challenges. The outstanding activity of 2024 shows how commitment to excellence and transfer contributes to transforming society.

Institutional projects



Fact: Dr Isabel de P. Trabal i Tallada (1924-2014) was the first woman in Catalonia to be awarded a degree in Industrial Engineering, and she was the valedictorian of the 92nd graduation year of the Barcelona School of Industrial Engineering (ETSEIB). She later obtained a doctorate in Industrial Engineering and became the first woman in Spain to do so.

Creation of the Specific Research Centre in Automotive and Advanced Mobility (CER-AMA)

On 20 March 2024, the UPC's [Governing Council](#) approved the creation of the [Specific Research Centre in Automotive and Advanced Mobility](#), aimed at promoting research, development and innovation of technologies and solutions in the field of automotive engineering, mobility and transport, in addition to promoting projects that contribute to growing the production system.

The Centre hosts the research and innovation in urban mobility hub [CARNET](#), founded in 2015 with [Volkswagen Group Innovation](#) and SEAT. Both CARNET and the UPC have been key players in creating [EIT Urban Mobility](#) and in establishing its headquarters in Barcelona, in 2018, as well as in promoting the [Centre for Research and Innovation in Advanced Mobility \(CIIMA-UP4\)](#).

Framework of the 2021-2027 RIS3CAT-ERDF Catalonia

In 2024, two proposals for [unique institutional R&D infrastructure projects](#) were prepared for adapting laboratories on the Diagonal-Besòs Campus and building a laboratory within the framework of the Barcelona Maritime Technology Park of the Barcelona School of Nautical Studies. Progress was made on an institutional proposal for the deployment of the Strategic Plan of the Knowledge Transfer Office to strengthen collaboration with society and the production sector, as well as on other proposals within the framework programme.

Institutional projects

Digital Innovation Hub of Catalonia (DIH4CAT)

The [Digital Innovation Hub of Catalonia \(DIH4CAT\)](#), coordinated by ACCIÓ within the [European Digital Innovation Hubs \(EDIH\)](#) network, promotes training in key areas such as cybersecurity, artificial intelligence, advanced manufacturing, robotics, supercomputing, smart connectivity, additive manufacturing and photonics. In 2024, the UPC, which coordinates the cybersecurity node, provided [10 outstanding courses](#), including two 20-hour cybersecurity courses, one on agile project management and one on the application of AI in industrial processes, and 23 specialised courses for SMEs through the [Digital Innovation Hub Support Programme \(PADIH\)](#). In addition, 2 MOOC courses on cybersecurity and energy were designed and launched at the end of the year.

Health Research and Innovation Institute (IRIS)

Created at the end of 2024, the goal of the [IRIS](#) is to consolidate itself as a benchmark in the field of health and promote collaboration between academic research and technological innovation. Through its creation, and with the constitution of the [future Faculty of Health Sciences](#) on the horizon, the UPC seeks to promote health research and establish synergies with other institutions, with the aim of making progress in this field.

New regulations for specific research centres and research institutes

In December 2024, the Governing Council of the Universitat Politècnica de Catalunya (UPC) approved the [regulations governing the procedure for creating, modifying, closing and monitoring UPC university research institutes](#). These regulations establish guidelines for the management of university research institutes that aim to strengthen their capacity to generate high-level research and adapt to current needs.

Accreditation as a knowledge transfer office

In July, the Ministry of Science, Innovation and Universities (MICIU) accredited the UPC [as a knowledge transfer office \(OTC\)](#), recognising its work in promoting and managing research and innovation. This recognition was awarded after a rigorous process in which 111 entities were evaluated across the country. With this accreditation, the UPC was recognised for fulfilling the five core functions that define knowledge transfer offices. These include protecting R&D results, exploiting research outcomes, fostering collaboration between public and private entities, promoting the creation of knowledge-based and technology-driven companies, and disseminating knowledge to society.

Institutional projects

unite! alliance

The European university alliance Unite!, to which the UPC belongs, is one of the main areas of activity for the institution and has had an impact on all of its groups and areas. Unite!'s influence is not limited to internationalisation; its activity is reflected in many other areas of the UPC. The construction of a pan-European university, coordinated at the UPC level by the Office of the Vice-Rector for International Policy, continues to advance, and there has been a significant increase in its activity. In 2024, the alliance organised seed fund calls to promote collaboration between universities in areas such as teaching, research, management and the creation of a university community. In addition, training weeks were held for teaching and technical staff, blended intensive programmes (BIPs) for students, matchmaking events for research staff and research weeks for master's and doctoral students, as well as other training activities such as workshops and seminars. Through several projects funded by European calls, Unite! consolidated its role as a consortium, expanded its scope and incorporated new actors and work themes, following a bottom-up approach that enriches the alliance's ecosystem. The UPC played a prominent role in competitive projects such as aUPaEU, MSCA Unite! Energy and others, in which it exercised clear leadership. Furthermore, the UPC rector's presence as the alliance's vice-president increased the influence of our institution and aligned the strategies of the UPC and Unite! more effectively.

Equality in research and transfer

The Research, Development and Innovation Area promoted several actions with the aim of promoting equality and the gender perspective in research and transfer. A survey of all teaching and research staff at the UPC was conducted to diagnose the current status of the incorporation of the gender perspective into the University's research projects. To integrate this perspective, specific training content was designed for teaching and research staff and technical, management, administrative and service staff. The Area also participated in networks, training courses and specialised conferences in order to strengthen internal strategies.

Gender equality

34%

of UPC research groups are led by women.

28%

of new patent applications were made by women.

14,3%

of Horizon Europe projects coordinated by the UPC have a female principal investigator.



Valorisation chain



There were 49 invention disclosures, which were managed through the new invention form.

The main objective of the protection stage is to ensure that it can be safely and effectively transferred and exploited at a later date. To achieve this, tools such as SafeCreative, PatSnap and UPC ideas, which centralises asset management and facilitates valorisation, are used. It also has the support of Bibliotècnica in evaluating the potential patentability of inventions before contact with approved patent agents. In 2024, 23 priority patent applications were made.

The valorisation stage seeks to bring the protected results to the market. To do this, databases such as Frost & Sullivan, which offers market research to identify competitors, trends and opportunities, are used. UPC ideas is also used to manage and track assets throughout the transfer process. In 2024, €33,106,424.07 in valorisation grants were obtained.

The mission of the publicity stage is to give visibility to the technologies available for transfer or exploitation. The technology offer form can be used to include technologies in the technological offer portfolio.

In 2024, three new software licences were signed with two SMEs and one entity.

We have a portfolio of 35 partially owned spin-offs.

We use the HubSpot platform, a CRM system for managing and monitoring progress and relations efficiently, to follow up projects.

RDI protection

The Universitat Politècnica de Catalunya - BarcelonaTech (UPC) is the leading university in patents applied for and exploited, with more than 800 patents registered throughout its history. In addition, it consolidated itself as the Spanish university that filed the most European patent applications in 2024, according to data published by the European Patent Office (EPO).

Contractual agreements

Licensing agreements allow the knowledge generated by UPC research groups and centres to be transformed into productive value.

Three software technology licence agreements were signed as a result of valorisation activity, as well as **32 confidentiality agreements** to explore new collaborations and potential licences with companies and **10 co-ownership agreements** that maintain intellectual and industrial property rights in a large number of collaborations.

The return of royalties and transfers resulting from the signed licensing agreements was 432,062 euros.

Patents

In 2024, the Universitat Politècnica de Catalunya - BarcelonaTech (UPC) filed **23 priority patent applications**, six more than the previous year, and expanded its international reach by filing five PCT applications. In addition, **17 new patent applications** were validated by the European Patent Office, of which the UPC is a partner. **This figure positions the UPC as the top university in Spain in number of patent applications.** Regarding other intellectual property titles that are not patents, 11 software and 3 brand titles were registered.

Two patents to highlight:



[Active flow control system for improving the efficiency of wind turbines](#)



[Green facade with thermal insulation for energy rehabilitation](#)

Awareness of the importance of protection

In this context, the Protection and Valorisation of Research Results in the Field of Architecture and Construction conference was held in November 2024 with the aim of promoting the protection and valorisation of research results. It promoted specific strategies and tools to facilitate effective transfer in this sector and encourage the exchange of good practices between research groups, technical valorisation staff and sector agents.

Portfolio of active spin-offs

Health

- Able Human Motion
- AlterAid
- Cebiotex
- E-Health Technical Solutions
- Elem Biotech
- Mimetis Biomaterials
- MiWEndo Solutions
- Nimble Diagnostics
- Rob Surgical System
- Sense4Carre
- VinceAI
- Virmedex

Telecommunications and ICT

- Algorae
- Dapcom Data Services
- MediaTG
- Nearby Computing
- Smart Tower
- Sparsity
- Ugiat Technologies

Semiconductors

- Beamagine

Transport and logistics

- Teknocea

Industrial technologies

- Applied Research for Development
- Aridditive
- Dracsys
- Process Talks
- Smart Engineering

Agri-food technologies

- Bio2Coat
- Nice Fruit

Construction

- Composite Structural Engineering Solutions

Energy and sustainability

- Energy Aware Solutions
- eRoots Analytics
- NRG.Lab
- Termo Fluids
- Vitsolc

Leisure and entertainment

- Ludium Lab

Successful disinvestment in Mitiga Solutions

The UPC sold its 1.43% stake in Mitiga Solutions, taking advantage of the capital increase of 8 million euros led by Elaia. This disinvestment is a significant step in the UPC's technology transfer strategy, which contributed to the founding of the spin-off in 2018 together with the BSC-CNS. Mitiga, which specialises in climate risk management with the EarthScan platform, has become a leading company in the climate technology sector, in which it has created more than 100 jobs. The UPC's exit consolidates its model of promoting innovation and the valorisation of research, which in 25 years has generated more than 400 technology-based companies.



[See all the information on active UPC spin-offs](#)

RDI networks

The Universitat Politècnica de Catalunya - BarcelonaTech (UPC) leads three of these valorisation networks, with the active collaboration of the Innovation Management Service.

In 2024, collaboration also took place with other reference networks: **AccessCat** (accessibility technologies), **TECSAM** (mental health technologies), **H2Cat** (renewable hydrogen technologies), **I4Kids** (paediatrics), **RDI-IA** (artificial intelligence), **Agritech** (agricultural technologies) and Supercomputation (supercomputing).

BlueNetCat

The activities and calls in which UPC groups participated were BlueNetOnCampus, Fem Xarxa 2024, BlueNet2Market and Maritime Hub 2024, as well as elevator pitch training, industrial property and communication, and acceleration and valorisation programmes such as BlueNetVal and BlueNetCamp.

XARTEC Health

XARTEC Health focuses on health technology. The activities and calls in which UPC groups participated were Venture Builder, Entrepreneurship Academy, Xartec Health Open Doors and Xartec Health Share and Connect.

XARFA

XARFA is led by the UPC's CIM Foundation and specialises in additive manufacturing. The UPC participated in several of its activities and calls, such as the customer and market validation service, the PowerDIW project, the Ariditive and PowerDIW spin-offs and market and patentability studies. It also participated in Advanced Factories 2024, in the annual XaRFA meeting and in events and training such as the first edition of the Entrepreneurship Programme for Researchers.

Entrepreneurship

Protection strategies and tools

Fomentamos la cultura emprendedora entre estudiantado, titulados y tituladas e investigadores e investigadoras UPC, organizando servicios, actividades y recursos para el intercambio de conocimiento, la detección de oportunidades y la creación de sinergias entre proyectos, empresas incubadas y otros agentes de nuestro ecosistema.

1 — PREINCUBATION

Promotion of entrepreneurial culture and support for the creation of new technology-based or innovative companies.

Beneficiaries: UPC students and/or graduates.

Idea/pre-seed stage (business model pending validation).

2 — INCUBATION

Support for the consolidation of new technology-based/innovative companies.

Beneficiaries: start-ups and spin-offs that are linked or may be linked to the UPC in the future.

Seed stage (validated business model).

3 — ACCELERATION

Support for the growth of new technology-based/innovative companies.

Beneficiaries: start-ups and spin-offs that are linked or may be linked to the UPC in the future.

+ seed stage (validated business model + initial traction).

ESA BIC

The UPC, through ESA BIC Barcelona, promoted space entrepreneurship in 2024 with the selection of five new companies and a complete incubation programme. At the same time, it monitored 11 incubated companies and consolidated its presence and alliances on a local and international scale.

Entrepreneurship - Preincubation

Through the [Emprèn UPC](#) programme, entrepreneurial culture is promoted and support is offered for the creation of new technology-based companies. Programmes are also carried out in collaboration with other bodies.

The Emprèn UPC programme offers support in product development, the definition and validation of the business model, the identification of complementary profiles to form a team, access to public and private funding, the definition of the intellectual and industrial property strategy, the development of the go-to-market strategy, legal advice, connection with relevant agents in the ecosystem, promotion and networking through the Emprèn UPC community, access to workspaces (Emprèn UPC spaces) and other advantages such as cloud computing credits.

The Emprèn UPC programme coordinates specific initiatives.

From science to market

[Programa Primer](#) is an initiative of the Catalan government, in collaboration with the UB, the UAB, the UPF and the UdG, to promote scientific entrepreneurship. Aimed at doctoral students and PhD holders, it offers 100 hours of training in knowledge transfer and the creation of companies stemming from research.

Industrial technology

The Catalan government's Programa Primer in industrial technology offers technical training, business management and personalised mentoring. In the 2024 edition, 31 members of the UPC participated—double the number of the previous year—and developed innovative projects with the support of more than 28 mentors and trainers.

SantanderX Explorer

A Santander Bank programme that is 100% online and available in 12 countries, in collaboration with the best talent centres.





Entrepreneurship and acceleration

High-impact projects in entrepreneurship and innovation in the territory

BCN Deep Tech Node

In 2024, work continued on the development of the Barcelona Deep Tech Node initiative, an alliance between Barcelona Activa, the UB, the UAB, the UPC, the UPF and the UOC to support deep tech start-ups and spin-offs and facilitate their access to the market.

The UPC designed and co-organised the 2024 Barcelona Deep Tech Summit, which was attended by more than 2,500 people and had more than 70 speakers and over 45 start-ups present in the activities. With every edition, it has become a point of reference in the Catalan entrepreneurial and transfer ecosystem.

University entrepreneurship network

The objective of the XEU is to organise coordinated actions to promote entrepreneurship, detect entrepreneurial talent and support entrepreneurial initiatives at universities. In this edition, 12 projects from the 12 Catalan universities were presented. In the university entrepreneurship pitch contest, the UPC was represented by the start-up THEKER Robotics, led by Carla Gómez.

Acceleration

Accel UPC programme

The Accel UPC programme, promoted by the Office of the Vice-Rector for Transfer, Entrepreneurship and Innovation of the UPC, aims to facilitate the consolidation and growth of UPC start-ups and spin-offs with the aim of guiding their growth and preparing them for access to private investment.

The programme combines training sessions and mentoring with experts in various areas, encourages connections with other founders and relevant agents in the ecosystem, includes meetings with both public and private investors, and culminates with a demo day and pitch at 4YFN.

It is intended for start-ups and spin-offs promoted by UPC students, alumni and/or researchers who have already had a certain degree of validation from the market or have gained initial traction.

In the 2024 edition, 14 start-ups and spin-offs participated.

The UPC at 4 Years From Now

The UPC once again stood out as an example of innovation and entrepreneurship at 4YFN 2024, the international event for start-ups held in parallel with the Mobile World Congress. The University presented a total of 44 technology-based start-ups created by students, alumni and research staff.

Of these, 16 exhibited their solutions at the UPC's own stand, in sectors such as health, artificial intelligence, urban mobility, sustainable construction, 3D printing and software development. The remaining start-ups participated in other spaces, showing the diversity and scope of the UPC ecosystem.

In addition to the exhibition of projects, the University participated in outstanding activities such as the networking event and several roundtables, including one on patent strategies, with the professor Carles Puente, and another focused on sustainable 3D printing, with the participation of the Aridditive spin-off.

Parc UPC

[Parc UPC](#)
[web portal](#)



The occupancy rate of Parc UPC facilities was 82%. Currently, 53 entities and companies carry out their activities in Parc UPC facilities and buildings, with the incorporation of 11 new organisations during the 2024 financial year. The overall turnover obtained from the temporary transfer of facilities during that period was €2,321,000.

The total number of professionals working in the companies and entities hosted in Parc UPC facilities amounted to 524. Of these, 68% (358 people) were directly linked to R&D activities. The aggregate turnover of these companies in 2024 was around €52,748,000, of which 26% (€14,066,000) was allocated to investments in R&D, which demonstrates the degree of engagement of Parc UPC's business fabric with innovation.

In 2024 there were new additions to Parc UPC facilities, which correspond to companies with a wide sectoral and technological diversity, which reinforces Parc UPC's cross-disciplinary nature and capacity to attract businesses.



82%
occupancy of
Parc UPC
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53
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524
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Parc UPC
entities

Open science and citizen science

Open science and citizen science are fundamental to democratising knowledge and breaking down barriers between experts and society. They allow data and discoveries to be accessible and reusable, which fosters global collaboration and efficiency in research. Involving citizens in science empowers people, strengthens trust in institutions and enriches research with new perspectives. Thus, these practices not only promote transparency, they drive collective progress in the service of humanity.

First UPC Open Science Award

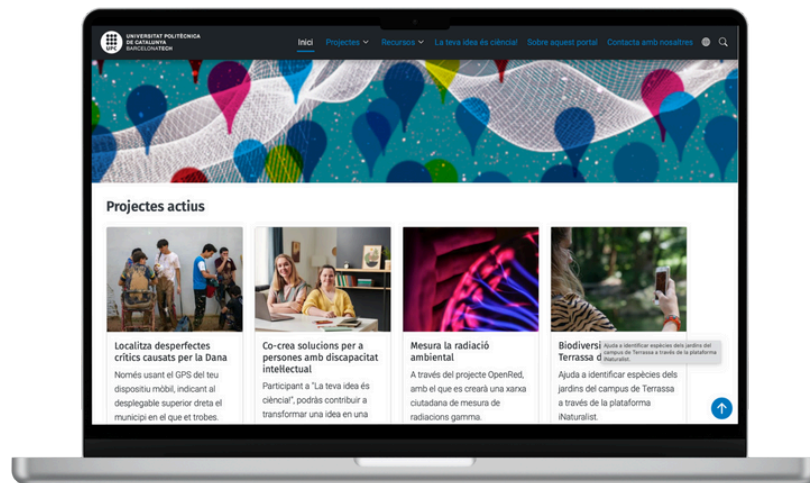
The professor Yolanda Vidal Seguí, from the Department of Mathematics and the Barcelona East School of Engineering of (EEBE), was awarded the [First UPC Open Science Award](#), a recognition of exemplary work in promoting open research. The jury valued her extensive scientific output in open access, the sharing of experimental data for the predictive maintenance of wind turbines, as well as her active role as an editor of open access journals, in which she promotes the open review of articles. The award was presented on 21 June as part of the [Fifth UPC Open Science Day](#), held at the ETSEIB, a meeting that brought together experts and professionals to debate the present and future of open science. Institutional initiatives were presented at the event, such as the UPC's 2025 Roadmap, and presentations were given by figures such as Mercè Crosas, on [FAIR data](#), and Pilar Rico, on the [European Open Science Cloud](#). The event highlighted the UPC's growing commitment to more transparent, collaborative and accessible research.



Open science and citizen science

Update of the UPC Citizen Science portal

A major update was carried out on the content of the [UPC Citizen Science portal](#) to promote active projects in which citizens can actively participate. A new section was also created to house all the information on the project [Your idea is science!](#), the citizen science competition promoted by the UPC and the iSocial Foundation.



At the end of 2024, the [Your idea is science!](#) project was launched. This creative competition was promoted by the UPC in collaboration with the [iSocial Foundation](#) and with the support of the AGAUR.

The aim is to find solutions to social challenges through scientific and technological projects that involve dialogue between users and technical staff of social services and UPC research staff and students. The first edition focused on the needs of people with intellectual disabilities, a vulnerable group.

The best ideas were evaluated and presented at a conference at the UPC in June 2025, to offer recognition to the academic community.



Chairs

UPC enterprise chairs are long-term strategic alliances between the University and the business community. They are conceived as dynamic platforms that promote collaboration in teaching, research, innovation and knowledge transfer. Each chair offers a set of activities adapted to the interests of the company, with a flexible work plan that can be reviewed every year. Management is shared between a company representative and an expert UPC professor, who have the support of a technical team.

New enterprise chairs in 2024

TAIGUA Chair

The [TAIGUA Urban Water Engineering and Management Chair](#) is a joint initiative between the UPC and the public company TAIGUA that promotes training and knowledge transfer in the field of urban water. The aim is to prepare professionals who are capable of managing this essential resource in a sustainable, efficient way that is adapted to current environmental and social challenges.

RUMB Chair

The [RUMB Chair](#), created in 2024 by the UPC and the Barcelona City Council, promotes sustainable and equitable urban regeneration in the Baix Besòs. Based at the ETSAV, it has researchers from the Urbanism Research Group and the Centre for Research and Services for the Local Administration, and promotes collaboration between the University, the government and the local community.

TÜV-SÜD Chair

The [UPC-TÜV SÜD Chair](#) for integrating ESG principles promotes research, training and knowledge transfer in business sustainability. Promoted by the UPC and the company TÜV SÜD and based at the ESEIAAT, the Chair promotes the integration of environmental, social and governance (ESG) criteria into corporate strategy through academic activities, seminars, awards and work placement.

Philanthropy

In a competitive, interconnected and global world, scientific philanthropy is the key to promoting high-impact projects and going beyond the limits of public funding. The UPC's ability to generate trust with international donors, foundations and companies reinforces its position as a leading university that is committed to disruptive research, academic equity and the generation of opportunities for students. Through a transparent and effective fundraising process, the University channels philanthropic support towards strategic initiatives that have scientific, social and territorial influence. Thanks to the generosity of its community, today the UPC can dream further afield and act closer to home.

The UPC, a pioneer in attracting international donations with tax incentives

The **Universitat Politècnica de Catalunya - BarcelonaTech (UPC)** became the first public university in Spain to have an agile and secure system for channelling international donations with recognised tax benefits for donors whose tax residence is the USA, France, the United Kingdom, Belgium, Switzerland or Germany. This milestone was achieved thanks to alliances with global philanthropic bodies and opened up new opportunities for attracting patrons and foundations that are committed to knowledge and social progress. The initiative consolidated the UPC as an institution that is open to the world, with the capacity to connect talent, research and global support.

Successful CFIS patronage campaign

The [patronage campaign](#) promoted by the [Interdisciplinary Higher Education Centre \(CFIS\)](#) achieved unprecedented success in 2024, both in terms of participation and impact. The contributions of students, companies and individuals made it possible to expand accommodation and international mobility grant programmes, making it easier for more students with high potential to develop their academic careers under equitable conditions. This initiative exemplifies the power of the UPC community to generate real, transformative opportunities.

Connèxia UPC



Connèxia UPC
Programa 360 universitat-empresa

The Connèxia UPC programme, which has been active since the end of 2023, continued to grow with the incorporation of Mecalux, Cetaqua and MSN in 2024, joining initial partners Schneider and Fractus. This long-term strategic collaboration with the UPC through the CIT-UPC, which will last a minimum of three years, promotes business innovation with personalised services, access to talent, RDI support and expert advice. In 2024, participating companies contributed €380,000. Three more companies are in the negotiation process to join in 2025.

The programme currently has its own management and an account manager, and it plans to expand the team as the number of members increases. Connèxia has become a model for collaboration between universities and businesses. It promotes long-term alliances, specific innovation projects and knowledge transfer actions. Its flexible structure allows it to adapt to the specific needs of each company and foster a two-way relationship that drives business growth, social engagement and sustainable development.



Ethics Committee



In 2024, the [UPC Ethics Committee](#) (CEUPC) carried out relevant initiatives **focused on training, dissemination and ethical awareness in academia and research. In the last two years, the CEUPC saw the number of applications double, reaching fifty in 2024.** An outstanding dissemination project was the creation of a video entitled [Ethics and research at the UPC](#). It was conceived as an introduction to the Committee's assessment of research projects. The video was **published in three languages** (Catalan, [English](#) and [Spanish](#)) and is available on the CEUPC YouTube channel. This awareness-raising effort came at a time when a growing number of conferences and journals were calling for the ethical assessment of research. A **technical session for new teaching staff (ALECTORS 2024) was also held.**

In the educational field, the CEUPC continued its activities within the curricula, of which **the optional subject Ethics in Science and Engineering**, which continues to be taught at several UPC schools, is a highlight. The Committee's work will be disseminated through the training activity "Criteria for assessing ethical aspects and data protection linked to educational research", which is being made available at the beginning of 2025. In terms of information, the web sections of [Documentation](#) and [Current events](#) continued to grow. **This set of initiatives reflects the Committee's commitment to integrating ethical principles within research and the university community.**

Scientific and Technical Services



The Scientific and Technical Services (SCT) **consolidated their activity and ended 2024 with a turnover of more than 3.9 million euros**. In 2024, the UPC's SCT were reaffirmed as a key player in supporting research, with prominent participation in the call for scientific infrastructure, which resulted in the **approval of eight projects with a total investment of 4 million euros**. Among the relevant actions of the year, we highlight **the audit of internal fees for European projects**, the organisation of **open days with APTÉ in various scientific fields**, participation in the [ICRI conference](#) and the **strengthening of international relations with infrastructure access agreements with [universities in Australia and the USA](#)**. In addition, a new digital portal was launched that features 85 facilities and 1,371 services synchronised with the Unite! Ágora catalogue. In economic terms, the total turnover was €3,904,923.88, divided between internal services (€772,973.04), services to third parties (€1,354,129.45) and contracts linked to the use of infrastructure (€1,777,821.39 €). These figures do not include several laboratories that have not yet reported their activity for 2024, so the actual turnover may be higher. With these results, **the Scientific and Technical Services position themselves as a strategic agent at the service of research and knowledge transfer**.

RDI information systems

Consolidation of SAQRA and Flux2 in the gRDI management tool

In 2024, notable improvements were promoted in ICT tools to support research, with the aim of facilitating the management and increasing the efficiency of processes linked to research activity. One of the main developments was the launch of Flux2, the new module of the gRDI manager that replaces the old Flux. This new tool features a renewed, intuitive and user-friendly interface and is integrated with the electronic signature book to facilitate electronic signatures and optimise internal workflows. In addition, it allows data to be collected in a structured way to simplify project management and incorporates the information necessary for assessing occupational hazards in research activities carried out outside the UPC. In parallel, a new system is being developed to plan and monitor the economic reporting of research projects. In this line of continuous improvement, work was also done to consolidate SAQRA, the quality system specifically designed to evaluate and increase the quality of applied research and technology transfer. SAQRA obtained ISO 9001-2015 certification after the AENOR assessment at the beginning of 2025.



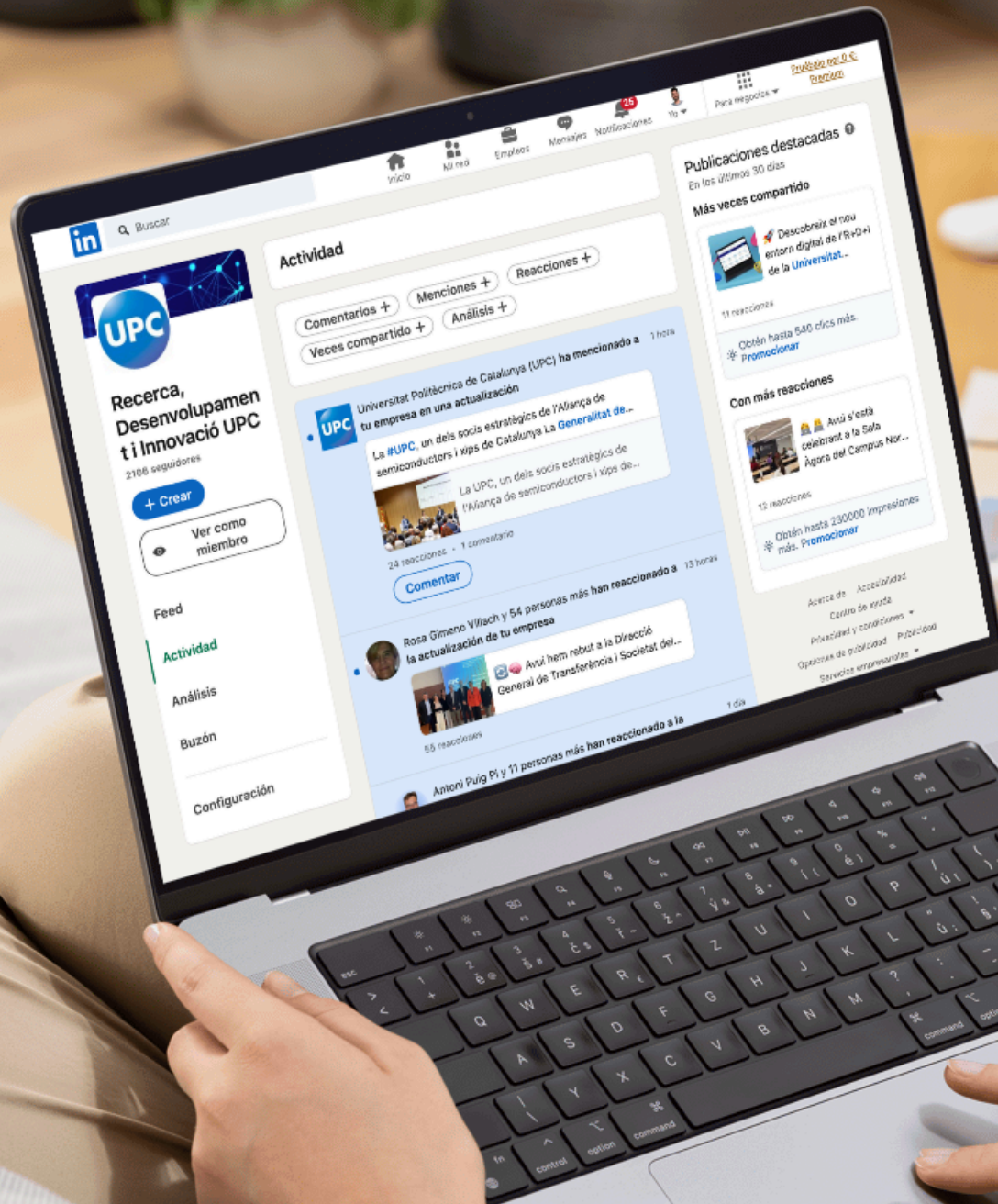
Communication



Reinforcing visibility and strategic connections

In 2024 we continued to consolidate communication that is aligned with the Area's strategic objectives and focuses on making the impact of RDI visible and strengthening the link with the community and agents in the ecosystem.

Social media



LinkedIn

As a strategy to intensify engagement and connection with stakeholders, in 2024 we published the activities of the RDI Area more intensively on LinkedIn. We achieved:

+ 100,000 impressions
+ 6,000 clicks
+ 1,300 new followers



We reached 3,500 followers by the end of the year on X, the social network formerly known as Twitter. In any event, the RDI Area joined the institutional decision to abandon X and move its activity to Bluesky (bsky.app/profile/rdi.upc.edu), where we have 200 followers.

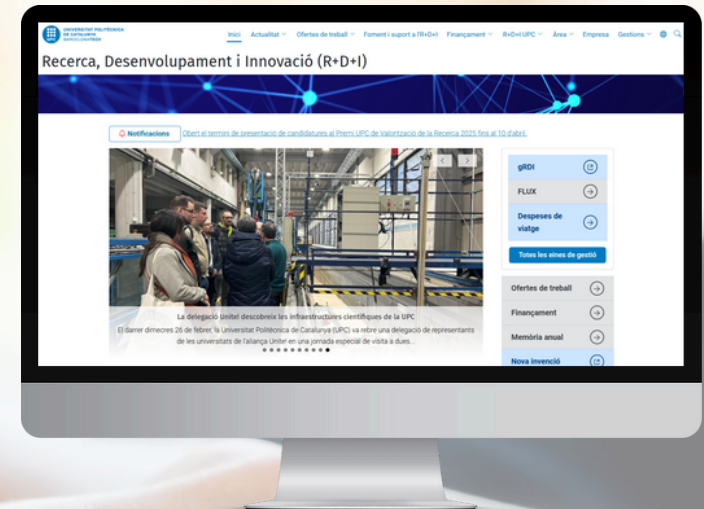
Web pages

Web portal of the RDI Area

The UPC RDI Area website was completely renovated to improve user experience and facilitate access to information, tools and resources for research and management staff.

Browsing data was analysed to create the new structure, which prioritises the most consulted content and offers it in a more accessible way. In addition, the design was inspired by the research portals of leading universities and combines aesthetics and functionality.

In the first months of publication (published in May), it already saw an increase in the total number of views compared to that for 2023.

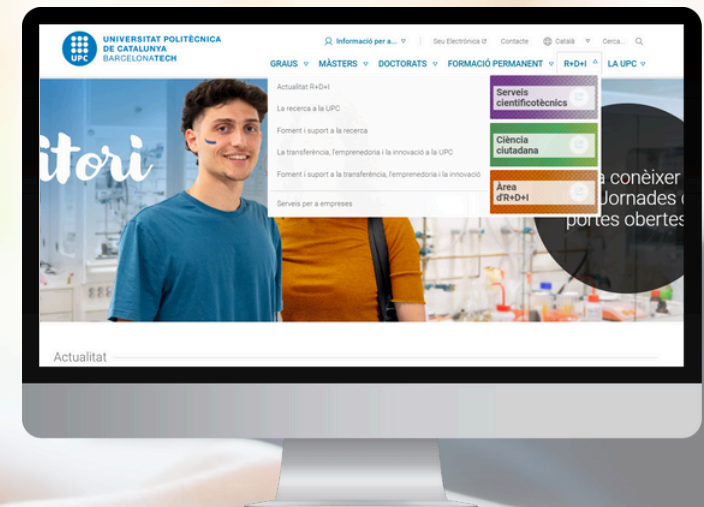


Web pages

RDI menu of the UPC website

Along with the new website of the RDI Area, the most public layer regarding information on RDI in the UPC digital ecosystem was also updated: the RDI menu. It was designed for all users, whether or not they are from the UPC, who want to learn about research and innovation at the UPC and find out what the institution offers to promote them.

Thus, the entire UPC RDI ecosystem now has an updated space where all the information can be consulted in a more transparent and accessible way. The entire UPC community, as well as companies, administrations, research and innovation bodies and research staff from other universities, will be able to find interesting and useful content.



News

RDI news

In 2024 we published a total of **79 news items** in the news section of the RDI website. In addition, we collaborated with the UPC Communication Service in preparing the most outstanding news that had an impact beyond the RDI Area:

- 01/03/2024 | [L'ecosistema emprenedor UPC torna a despuntar, un any més, al 4YFN](#)
- 30/05/2024 | www.upc.edu/ca/sala-de-premsa/noticies/premi-loreal-maria-godoy-biomaterials-intel·ligents
- 04/06/2024 | [Dos projectes d'innovació en 6G de la UPC, seleccionats pel programa UNICO I+D](#)
- 27/06/2024 | [El Centre de Recerca en Ciència i Enginyeria Multiescala de la UPC rep l'acreditació d'Unitat d'Excel·lència María de Maeztu](#)
- 17/10/2024 | [Primera universitat espanyola en captació de fons del programa Horizon Europe](#)
- 25/10/2024 | [La UPC, entre les cinc universitats líders a Espanya en volum de patents](#)

The UPC's new RDI menu now includes an exclusive section on **RDI news**. You can find all the UPC news filtered by this topic, as well as direct links to the latest news from the RDI Area, the magazine The UPC and..., the podcast Algorrrritmes UPC and the UPC experts directory.



E-mail notifications

The Area consolidated its use of the institutional GenNews tool to inform teaching and research staff and other specific groups of new developments: calls, resolutions, conferences, publications, guidelines, etc.

In total, throughout 2024 **144 notifications** were sent, which, with a 64% reading rate, implies a total of 272,671 impressions.

Newsletters

The UPC and... magazine

In 2024 we continued to collaborate with the Communication Service in drafting the magazine [The UPC and...](#)

Specifically:

- April 2024 | [The UPC and quantum technologies](#)
- July 2024 | [The UPC and water, marine and maritime resources](#)
- December 2024 | [The UPC and batteries](#)



Fil Directe

The publication of the new RDI Area website was featured on the cover of the [May](#) 2024 edition of Fil Directe, and the MWC/4YFN was featured in [February](#).

RDI news also appeared in many other editions, such as:

- The Center for Research in Multiscale Science and Engineering was accredited as a María de Maeztu Unit of Excellence.
- The First UPC Open Science Award was awarded to the professor Yolanda Vidal.
- Mecalux joins the Connèxia UPC programme
- Your idea is science!





Future



A more people-oriented RDI

We are moving towards a horizon where the ultimate goal of research and transfer activity is the impact on people.

■ Research and transfer at the service of progress

2025 must be the year in which the social impact of the UPC's activity is consolidated through open, inclusive research that is committed to gender equality, as well as knowledge transfer that generates shared value with society and the productive fabric. In this scenario, research, development and innovation are faced with the constant challenge of reinventing themselves without losing their essence and committing to excellence and competitiveness, now with the strategic support of artificial intelligence.

In an environment undergoing accelerated transformation, it will be essential to rejuvenate the pulse of the UPC, cultivating new knowledge and talents that ensure the continuity of the quality and impact of our research. On this path, AI is not just a tool but an essential route to continuing to be a leading university, keeping the ambition of a public institution that wants to continue to be a beacon of knowledge alive.

From the field of research and transfer, the UPC maintains its commitment to scientific and technological advancement, working to consolidate and improve results in fundraising. To achieve this, it is essential to continue offering ongoing support to the research community and thus contribute to the return on investment in research and innovation.

At the same time, the University reaffirms its commitment to ethical, participatory, open and environmentally friendly science, and ensures that this commitment is fulfilled and integrated into all stages of research activity. In the same vein, the UPC will continue to expand borders and forge global alliances that transform RDI activity into a catalytic force: a force capable of uniting international talent, high-impact research and a community committed to social and economic progress.



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Glossary



Definition of RDI technical terms and abbreviations

Glossary

Licence agreement

A contract under which the licensee obtains from the licensor the right to use the licensor's assets, usually of a non-tangible or intellectual nature, in exchange for a financial consideration.

Back office (internal management)

Sections of an institution that are not customer-facing.

Citizen science

Active participation of non-professionals in scientific activities.

Open science

A collaborative and transparent approach that aims to facilitate open access to data, methods and research in order to encourage collaboration.

Competition

An open competition between several people or institutions in the same conditions to choose the best one(s).

Call

A call for project proposals to receive funding.

TBC

Technology-based company.

EPO

European Patent Office.

Pre-award/post-award stages of a project

Two distinct stages that occur before and after the awarding of a grant.

Hub

A centre or platform where people, companies and institutions come together to collaborate.

Tendering

A procedure to award a service to the bidder that offers the best price.

PTGAS (formerly PAS)

Catalan initialism for personal tècnic, de gestió i d'administració i serveis (technical, management, administrative and service staff).

Patent

A legal title that recognises the right to exclusive exploitation of the patented invention and prevents others from making, selling or using it without the holder's consent for the term of the patent.

PCT

Patent cooperation treaty.

PDI

Catalan initialism for personal docent i investigador.

RDI

Research, development and innovation.

Royalties

Financial consideration paid by a licensee to a licensor for exercising the right to use and commercially exploit a patent, software or knowledge owned by the licensor. Royalties are calculated as a percentage of the revenues generated by the licensee from the exploitation of the licensed industrial and intellectual property rights.

Spin-off

A new entity created within an institution.

Start-up

A company that is based on an innovative idea, but is not created within an institution.

TRL

Technology readiness level, a method for estimating a technology's degree of maturity.

Universitat Politècnica de Catalunya

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