

ANR Funding research in all its diversity



2021 Annual Report

ANR 2021 Annual Report



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by Thierry Damerval,
ANR President and CEO



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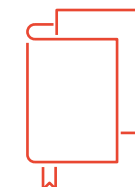
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EDITORIAL
BY THIERRY DAMERVAL
President and CEO of ANR

LPR, French Recovery Plan, France 2030, Science with and for Society, etc. An historic year for ANR



In the short history of ANR, 2021 will go down as a crucial year. The Research Programming Law (LPR), passed on 24 December 2020, specifically provides for a significant increase of funding allocated by ANR to research teams and institutions.

ANR thus saw its role within the research and innovation ecosystem confirmed, and its missions strengthened.

Increased budgets provide new prospects for supporting scientific communities.

In this favourable situation, Programming Advisory Panels (CPP) conducted a reflection process from September 2020 to April 2021. This led to significant developments in the General Call for Proposals (AAPG), under which researchers enjoy a great deal of freedom.

The reflection process also focused on strengthening partnership-based research, developing gateways and interactions with European programmes, and enhancing the capacity to meet urgent or specific research needs.

Changes to the General Call for Proposals

The AAPG is structured around 37 themes based on major scientific disciplines, in order to meet the needs of all communities. The most significant developments came in the social sciences and humanities (SSH), which expanded from 4 to 7 themes in an effort to cover all SSH fields. An engineering science theme and a regenerative medicine theme were also implemented.

Furthermore, consideration of the United Nation's Sustainable Development Goals was strengthened across all 37 scientific themes—especially in the 19 interdisciplinary themes—by promoting inter-, trans- or multidisciplinary research focusing on major transitions: the energy and ecological transition, digital transformation, One Health, and sustainability science.

Strengthened partnership-based research

We strengthened our support for partnership-based research by increasing the contributions made to the Carnot programme, going from €62 million in 2020 to €82 million in 2021. We began the effort to reinforce LabComs and Industrial Chairs, and will continue to do so over the next few years.

A total of 2,291 projects were funded in 2021, 579 more than in 2020. The success rate rose to 23.1%, including 22.7% for the Generic Call for Proposals, which is a first step towards the 30% objective established by the law.

Finally, the “preciput” rose from 19% in 2020 to 25% in 2021, representing an increase from €100 to €163 million allocated to institutions.

Launched by the French Government in response to the Covid-19 epidemic, the France Relance Recovery Plan complemented the budgetary amount initially allocated by the LPR, increasing ANR's funding budget to €296 million. ANR was also tasked with supporting the R&D Job Preservation measure set out in the Recovery Plan, to support and preserve the human research and development capabilities of enterprises. In 2021, 949 staff members benefited from the measure.

The LPR provides for the creation of a single portal for calls for proposals. Developed in partnership with ANR, ADEME, INCa, Anses, Inserm and ANRS-MIE, the appelsprojetsrecherche.fr portal was launched in October 2021, providing better visibility and easy access to the calls for proposals conducted by these agencies. The portal was then expanded to other institutions, and will gradually be improved with new services aimed at simplifying the work of scientists and managers.

A Science with and for Society Programme

One of the priorities of the LPR is to strengthen interactions between science, research, and society, with the goal of having ANR allocate up to 1% of the calls for proposals budget for this purpose. In February 2021, ANR launched a call for expression of interest to identify the needs and expectations of scientific communities. Based on the results of this call, we proposed a multi-year call for proposals programme. At the same time, the Agency is developing partnerships for disseminating scientific culture, and has for many years participated in the Fête de la Science festival, as well as the Et Maintenant? festival with France Culture and Arte since 2021.

In line with the LPR, 2021 saw the signing of the Objectives and Performance Contract for 2021-2025 (COP), renewing the confidence pact between the French government and ANR. Acting as the Agency's roadmap for the coming years, the COP is based on six major strategic guidelines^[1], each broken down into several objectives, and coupled with milestones and statistical indicators.

ANR, a France 2030 operator

Launched in 2021, France 2030 continues the commitments made under the Investments for the Future Programme. With a budget of €54 billion, the programme encourages investment and innovation based on ten major strategic objectives for the future of our country, in priority areas that generate growth and employment.

ANR is one of the four operators contracted for France 2030, along with Bpifrance, the Caisse des Dépôts - Banque des territoires, and ADEME. This role involves organising selection, contract negotiation, providing funding, mo-

onitoring, auditing, and reviewing the impact of projects, actions, and programmes in the field of higher education and research.

The year 2021 was of crucial importance. Important adjustments were made, and 2022 will see a continuation of the actions undertaken (maintaining success rates, preciput growth, strengthening partnership-based research, a new increase in contributions to the Carnot programme).

2022 will also be an opportunity to launch new pilot projects to meet the needs expressed during Programming Advisory Panels and the many interactions with our stakeholders. This is how we will meet our essential objective of “serving Science.”

[1] See page 13



01

ANR
2021 highlights

Missions and values

- ↘ The French National Research Agency is a public, project-based research funding agency in France.
- ↘ It supports all scientific fields.
- ↘ It acts as a contact for public and private research organisations, universities, and *grandes écoles*, as well as small, medium, and large-sized enterprises.

↘ It supports all research, from basic to applied, with various levels of technological maturity.

↘ It encourages research excellence and French innovation at the national, European, and international level.



over **24 000** projects funded since 2005

Project-based funding

Peer review is the core of project-based funding, the theoretical foundations of which were laid out in 1962 by the chemist and sociologist Michael Polanyi in his seminal article "The Republic of Science". To fulfil its project-based research funding mission, ANR conducts annual generic or specific calls for proposals, and implements a selection process based on fundamental international principles.

This type of funding encourages scientific collaboration, promotes interdisciplinarity, and helps support French scientific research at different levels of technological maturity, and also meets major scientific and societal needs.

07 February 2005
ANR founded as a public interest group.

01 August 2006
Decree No. 2006-963 establishes ANR as a public institution, placed under the supervision of the Minister of Research.

23 September 2010
ANR becomes the French government's main operator for implementing Investments for the Future Programmes in higher education and research.

24 March 2014
Decree No. 2014-365 introduces a new mode of governance by appointing a President and CEO, and provides for the creation of a Scientific Evaluation Panel. ANR's missions are extended to assessing the evolution of the research offer, and measuring the impact of the funding it allocates.

24 December 2020
The Research Programming Law No. 2020-1674 confirms ANR's missions and expands its resources, increasing its funding budget to €1 billion by 2027.

5 missions were defined by the Decree of 1 August 2006, amended in 2014



FUND AND PROMOTE the development of basic and targeted research, technical innovation, technology transfer, and public-private partnerships.



IMPLEMENT the programme approved by the Minister of Research, following consultation with the Ministers responsible France's research organisations and public higher education institutions.



MANAGE major government investment programmes in the fields of higher education and research, and oversee their implementation.



FOSTER greater scientific cooperation across Europe and worldwide by aligning the Agency's Work Programme with European and international initiatives.



ANALYSE trends in research provision and assess the impact of the funding allocated by the Agency on scientific output in France.

Our values

QUALITY of the environment in which employees work and services are provided to users, along with the Agency's selection procedures (ISO 9001 certification). This value incorporates the notion of excellence, adaptability, reliability, and efficiency. It contributes to an approach based on continuous improvement and bias prevention.

FAIRNESS in the way projects and people are treated (employees, peer reviewers, project coordinators), including the concepts of impartiality, probity, ethics, neutrality, integrity, gender equality, and respect for diversity and plurality.

TRANSPARENCY of processes, missions, and open science policy. It encompasses the concepts of trust and social responsibility. It includes a commitment to open data and the publication of indicators, including gender breakdowns.

Direction and targets to be reached by 2025

Signed on 26 April 2021 in the wake of the LPR, the Objectives and Performance Contract for 2021-2025 (COP) renews the confidence pact between the French government and ANR. Acting as the Agency's roadmap for the coming years, the COP is based on six major strategic guidelines, broken down into several objectives, and coupled with milestones and statistical indicators.

Theme 1
Supporting research in all its dimensions, in service of all scientific communities

- Encouraging investigator-driven scientific creativity
- Strengthening the relationship between research and innovation (maturation, partnership-based research support)
- Developing capacity for reactivity and specific responses

Theme 4
Promoting responsible research conduct, from the laboratory to all of society

- Strengthening the quality of selection
- Promoting responsible operational conduct
- Further incorporating sustainable development objectives
- Developing the sharing of results

Theme 2
Strengthening national partnerships with all types of funding bodies and research and innovation stakeholders

- Strengthening partnerships with actors in research
- Facilitating the search for funding in partnership with other research funding agencies
- Supporting institutions with research needs
- Supporting projects with innovation and entrepreneurship stakeholders

Theme 5
Strengthening project follow-up and ex-post evaluation, and using this evaluation to service science and society

- Better data collecting
- Better data assessment
- Data serving research

Theme 3
Promoting European and international cooperation to contribute to the influence of French research

- Playing an active role with other European and international funding agencies
- Concentrating resources on strategic partnerships and supporting the European and international strategies of laboratories and institutions.
- Strengthening the involvement of French teams at the European level

Theme 6
Optimising operations in the service of research and beneficiaries – being the agency that facilitates access to funding

- More agile organisation to better serve beneficiaries
- Efficient and streamlined operation
- Adapting skills and working conditions

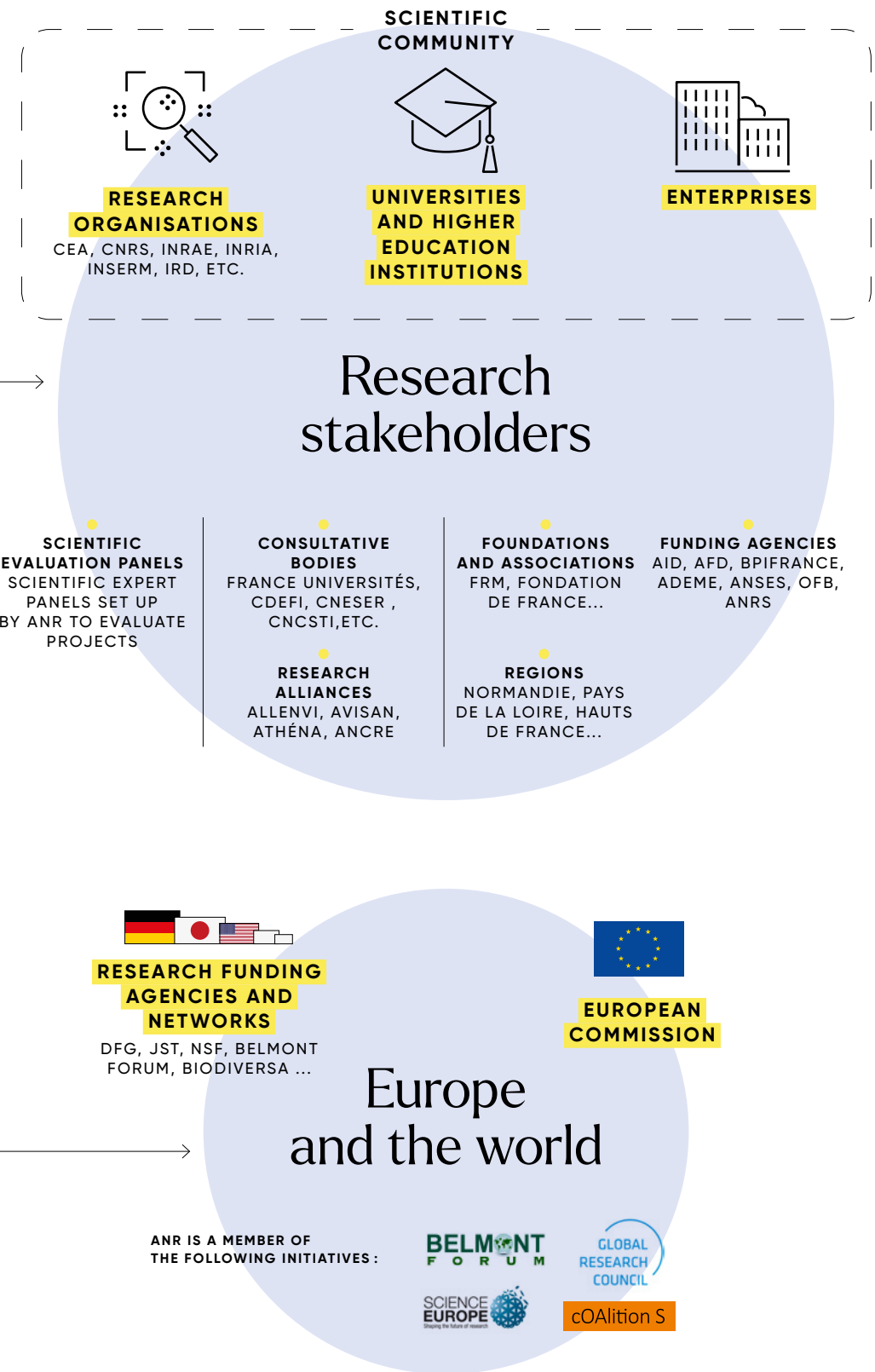
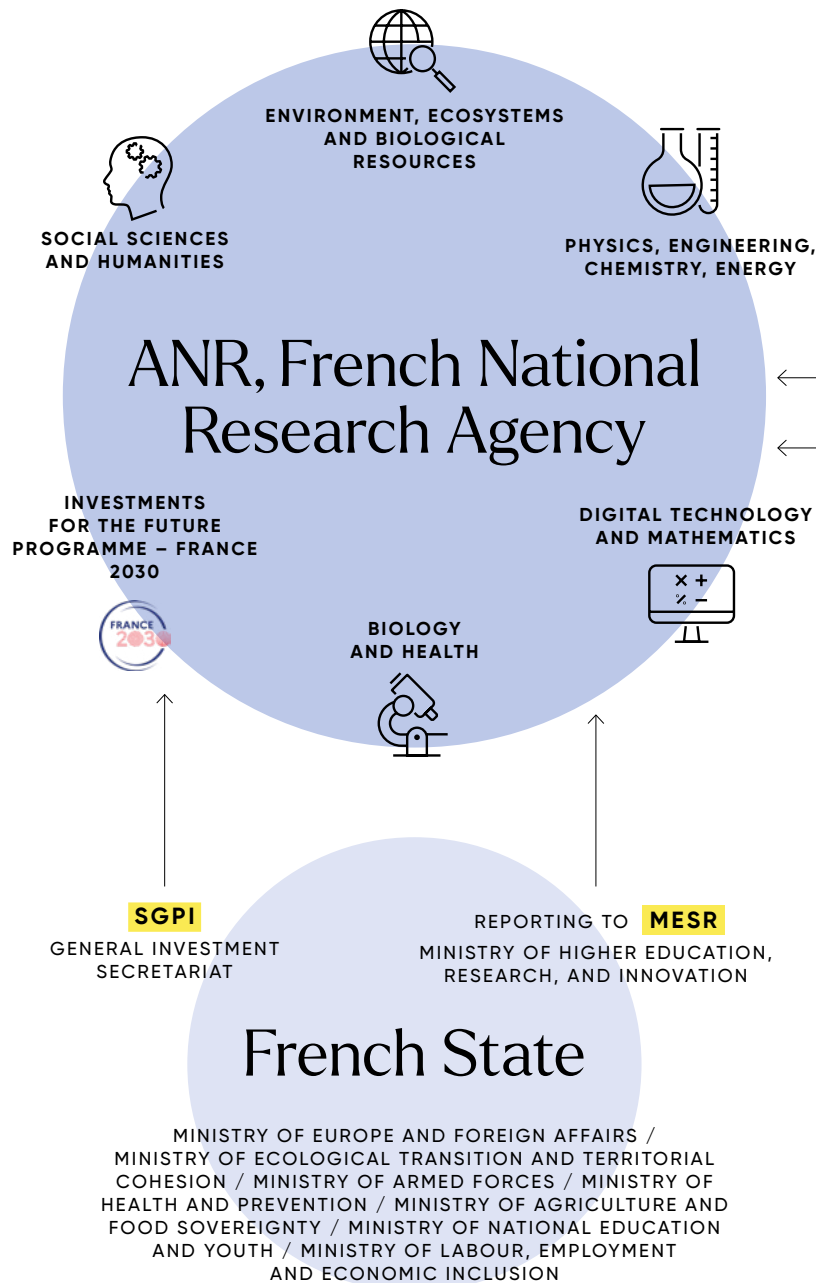
The 2021-2030 Research Programming Law

The LPR, passed on 24 December 2020, significantly increases funding to respond to the scientific challenges of our time, and to strengthen the international position of French research.

This law confirmed ANR's role in the research and innovation ecosystem, strengthened its missions, and significantly increased its means of intervention.

The Agency's work is part of a huge ecosystem of higher education, research, and innovation. It maintains close relationships with the main funding bodies and research stakeholders: government ministries, public research organisations, universities, enterprises, local authorities, etc.

These partnerships extend across Europe and the world to bring French research and innovations to the front of the world stage.



Expertise: evaluating and selecting projects

The selection of projects submitted to ANR is based on peer review, a key principle of scientific research. The Agency guarantees equal treatment and the independence of scientific peer review by putting Scientific Evaluation Panels at the heart of its selection process. It also ensures compliance with ethical principles such as impartiality, absence of conflicts of interest, confidentiality, and promoting gender equality. Since 2018, all stages of the selection process implemented by ANR are ISO 9001 certified, the international standard.

By whom?

Scientific Evaluation Panels (CES)

Consisting of French and international scientific figures, each evaluation panel falls under a specific research community. Responsible for conducting and leading the sessions independently, CES chairs are aware of the Agency's commitments and values, and ensure that rules of ethics and scientific integrity are followed. They are appointed by ANR through a call for proposals for a term of one year renewable twice, and propose the composition of their panel, including their Vice President, to the agency. In appointing CES members, ANR especially ensures that the various scientific fields are represented, that parity is respected, and that affiliations and geographical origins are balanced.

Peer reviewers

External to CES, peer reviewers specialising in the project's field are called on by ANR upon proposal by CES members for a confidential and independent evaluation, with no exchange with the panel. Within the framework of the Generic Call for Proposals, anonymous peer reviews are systematically submitted to project coordinators, who have the right to respond with factual elements before panel meetings.

How?

Ethically and with integrity

Before accessing applications, all reviewers agree to comply with the principles of ANR's Code of Ethics and Scientific Integrity, in addition to the French National Charter for Research Integrity.

These principles focus on impartiality, the elimination and prevention of conflicts of interest, confidentiality, promoting gender equality, and professional responsibility. ANR acts appropriately if any rules are breached, and has appointed an ethics and scientific integrity officer. The Agency is also regularly audited and evaluated on this subject.

Rigorously

Scientific excellence, composition of the consortium, project organisation, etc. Each project will be evaluated according to criteria predetermined in each call for proposals. They are publicly available and can be found on ANR's website.

Collectively

Panel members individually evaluate a portfolio of projects. They then debate each project during a meeting, and collectively decide on the list and ranking of projects proposed for funding.

How is it important?

Compliance with principles of Ethics and Scientific Integrity depends on:

- the quality of evaluation,
- the quality of selection,
- a relationship of trust with scientific communities,
- a relationship of trust with society.



over
7,000
scientists
mobilised
each year



over **50**
CES gathered
for the AAPG

And then?

Each research project selected for funding is subject to a contractual agreement between ANR and the supervisory authority managing the allocated financial aid. This stage, known as the contract negotiation process, is the final part of the selection process. ANR then ensures the funding and monitoring of the ongoing project. It ensures that the funding allocated exclusively covers the expenditure needed to conduct the project, and that it is carried out in accordance with the proposal by approving any changes (timetable, contributions, objectives, tasks, partnership,

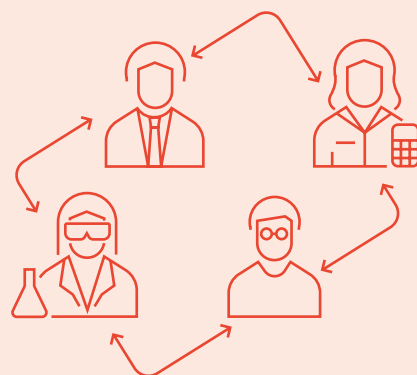
etc.). In an effort to continually improve and to ease the administrative burden on research teams, the Agency has been committed for several years to simplifying and improving its agreement, funding, and project monitoring procedures. It also relies on regular interactions with scientific communities and institutional stakeholders, in order to better identify their expectations and needs.

An annual Work Programme

The Work Programme, an annual strategy paper, is ANR's programme roadmap. It is drafted the year before its implementation. It determines research priorities and presents the main actions conducted by the agency, in addition to the instruments provided. It applies to all scientific communities, including research and innovation stakeholders, by providing an overview of its funding offer.

📍 A collaborative production

ANR works closely with scientific communities to develop its annual Work Programme, in an effort to consider their priorities and needs. To this end, in 2018 it founded advisory boards—Programming Advisory Panels (CPP)—which offer a space for institutional stakeholders in French research to meet. Programming is clearly distinguished from project evaluation.



Institutional research stakeholders represented...

- Ministry of Research (MESRI)
- Other ministries
- French National Research Alliances (Allenvi, Allistene, Ancre, Athena, Aviesan)
- CNRS
- Conference of University Presidents (CPU), now France Universités
- Private Research

... in 7 Programming Advisory Panels

- Life Sciences
- Energy and Materials
- Digital
- Environment
- Social Sciences and Humanities
- Mathematics and its interactions
- Physics of matter – Sciences of the Universe

[1] Special (inter-CPP) meetings are also held for interdisciplinary fields.

↘ Extensive scientific restructuring of the AAPG in 2021

The reflection process conducted from September 2020 to April 2021 by Programming Advisory Panels (CPP), followed by a consolidation phase in May 2021, covered scientific themes and led to an extensive restructuring of the Generic Call for Proposals (AAPG).

This served two purposes. First, scientific themes were reworked to better respond to the needs of all communities, particularly in Social Sciences and Humanities (SSH). Second, inter-, trans-, and multidisciplinary research was promoted in an effort to align with the Sustainable Development Goals (SDGs) adopted by the United Nations.

As a result, a number of scientific themes were changed, removed, or reintroduced in other themes. The AAPG's new scientific structure now covers 56 themes, including 37 disciplinary and 19 interdisciplinary themes, or 6 more than the previous year. SSH are now part of 7 disciplinary themes, as opposed to 4 previously, covering all relevant disciplines, and ensuring greater consistency with the SSH organisation of the European Research Council (ERC).

↘ With new means come new capacities: strengthening and creating instruments

The introduction of the Research Programming Law 2021–2030 consolidated the missions carried out by ANR. The growing budget estimate provides scientific communities with new support opportunities, on which Programming Advisory Panels (CPP) also expressed an opinion.

In the 2022 Work Programme, this translated firstly into strengthening existing instruments. For example, LabComs will be better equipped, reworked, and widely promoted, including SSH teams that rarely use this instrument. Furthermore, the Single-team Research Project (PRME) instrument was reintroduced in the AAPG to ensure clarity. It supports ambitious research projects led by a single team, and supplements four other AAPG instruments: Young Researchers (JCJC), Collaborative Research Projects between public entities at the national (PRC) or international (PRCI) level, and other public or private entities (PRCE).

In addition, a limited number of new instruments were created. Whether in experimental or pilot form, they will adjust based on the answers provided by the communities, as well as the evolution of their needs. This is true for the Public-private research project (PRPP) instrument, which will enable the technological or social implementation of results from promising projects through new partnerships. This also applies to the Access-ERC instrument, which provides funds to host young researchers applying for a future European Research Council (ERC) programme in a French research laboratory. During its experimental phase, it is limited to SSH post-docs. ANR is also expanding its targeted offer with two pilot calls to fund projects to mine the data from very large research infrastructures (TGIR/IR).



An in-depth look with Yves Fort

A look back at eight years of orchestrating ANR's Work Programmes

Yves Fort, an organic chemistry professor at the Université de Lorraine, has been involved as a Scientific Evaluation Panel member at ANR since its foundation. In 2014, he became the Head of the Scientific Operations Division (DOS). Over the years he coordinated the structuring of the programme and the simplification of procedures for scientists or their managing institutions. A look back at 8 years of consultation with all scientific communities.

01 What was the first challenge you faced following your appointment as Scientific Operations Director?

The DOS was established in 2014 to manage all calls for proposals (AAP) conducted through ANR's funding budget. Back then, Geneviève Fioraso, the Minister of Research, asked us to reorganise them within a difficult budgetary context. The AAP landscape was highly fragmented, and the information did not necessarily reach all researchers. To meet the needs of scientific communities—communicated via the Research Conference—we established a Generic Call for Proposals (AAPG) intended for all scientists in all fields. We also initiated a two-stage procedure, with a short pre-proposal to be submitted first, and then a detailed proposal for short-listed projects only, thereby reducing the initial time spent by researchers when completing their applications.

02 New developments were subsequently introduced. Which ones and why?

In Autumn 2016, in response to how difficult it was for basic research to take its place within the structuring of societal challenges, we organised the first ANR Tour, which has now become an institution: we meet researchers in universities to explain the development of our Work Programme, evaluation process, etc. Then in 2017–2018 we adopted a writing style based on disciplinary or interdisciplinary scientific themes, and created new advisory boards known as Programming Advisory Panels (CPP), which contribute to the drafting of Work Programmes. Sectoral CPPs bring together representatives from universities, Alliances, etc. They have improved interactions with scientific communities.

03 Eight years after your arrival at the DOS, what conclusions have you drawn?

I myself come from the scientific community. I was in charge of a research unit until 2015, and was very aware of the requests made by my colleagues. The DOS has always strived to consider feedback as much as possible, with a view to simplification. The process has gradually taken form, and is now certified. We now have a two-stage submission, programming, selection, and evaluation process: everything is now well structured, and understood and accepted by researchers.

2022 ANR Tour: a month of discussions with research stakeholders

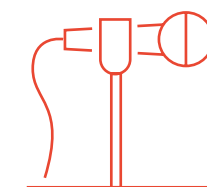
For the past six years, ANR Tour has provided scientists, implementation officers, and institution managers with support from ANR teams in reading the Work Programme. This year, in light of the current health situation, the event was once again held online. Over 30 informative and discussion webinars were organised between 6–30 September 2021. These meetings helped explain the new features of the 2022 Work Programme, the AAPG 2022 themes by scientific department, calls devoted to public-private partnerships, calls funded by the Ministry of Armed Forces, European and international instruments, the agency's Open Science policy, actions for considering gender in research projects, consortium agreements, financial regulation, and project monitoring procedures.



More information about ANR 2022 online:
evenement.anr.fr/anrtour2022



31
webinars



over 40
speakers

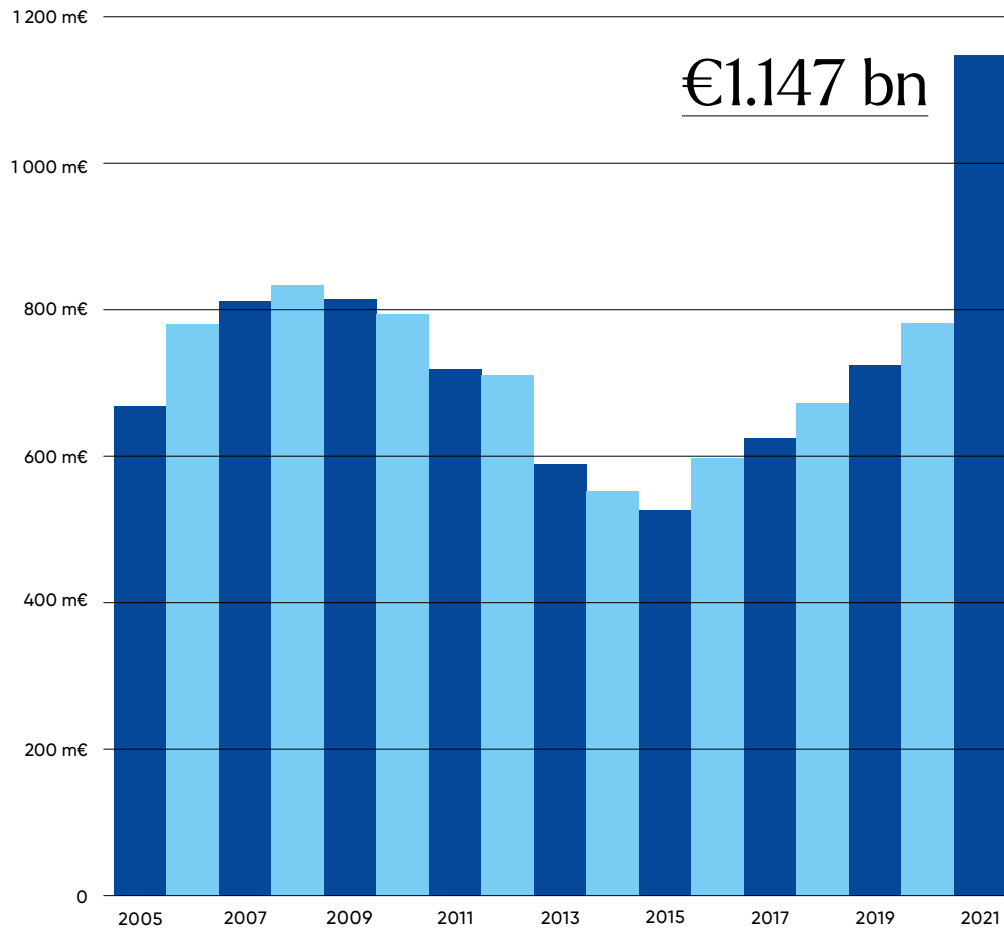


over 5,000
participants

An unprecedented increase of its funding budget

In 2021, ANR funded research projects in the amount of €1.147 billion in commitment authorisations, €366.2 million more than in 2020, and €421.7 million more than in 2019. This expansion was made possible by the Research Programming Law, which provided for a significant increase for ANR to fund more projects and to raise the selection rate, and hence the number of projects supported.

Launched by the French government in response to the Covid-19 epidemic, the France Relance Recovery Plan supplemented the original budget allocated by the LPR, increasing ANR's funding budget by €296 million.



↑ Evolution of ANR's funding budget since 2005 (actual budget)

These developments resulted in a higher AAPG selection rate in 2021, made possible by additional funds of €266 million compared to 2020, and €301.6 million compared to 2019. They also enabled the funding of artificial intelligence projects in the amount of €9.4 million, within the framework of a multi-annual plan launched by the Ministry of Higher Education and Research (MESRI), as well as funding for actions to combat Covid-19, initiated in early 2020 for €10 million.

In addition, the preciput rate paid to institutions rose from 19% in 2020 to 25% in 2021. Finally, we strengthened our partnership-based research support by expanding the contributions made to the Carnot programme by 30%, increasing from €62 million in 2020 to €82 million in 2021.

The preciput

ANR pays a preciput, or financial contribution to institutions and laboratories in the public service of research, selected via calls for proposals funded by ANR, under Article L. 329-5 of the French Research Code.

ANR's 2021 budget led to a first increase of the preciput to 25% in 2021, representing approximately €163 million in 2021, compared to around €101 million in 2020.

As of 2021, the preciput henceforth includes 3 shares. The management share covering the project's overhead costs rose from 8% in 2020 to 10% in 2021. The hosting share intended for the cost and quality of accommodation for research teams increased from 11% in 2020 to 13% in 2021. Finally, the laboratory share, intended to support the scientific strategy and funding of research units, reached 2% of all eligible costs. In accordance with the Decree No. 2021-1628, an additional "site" share will be allocated beginning in 2022 to the hosting institution, in order to contribute to the site's scientific strategy.

The co-funding of calls for proposals by public agencies and contributions from the European Commission represented €42 million in 2021, or 3.7% of the total funding budget.

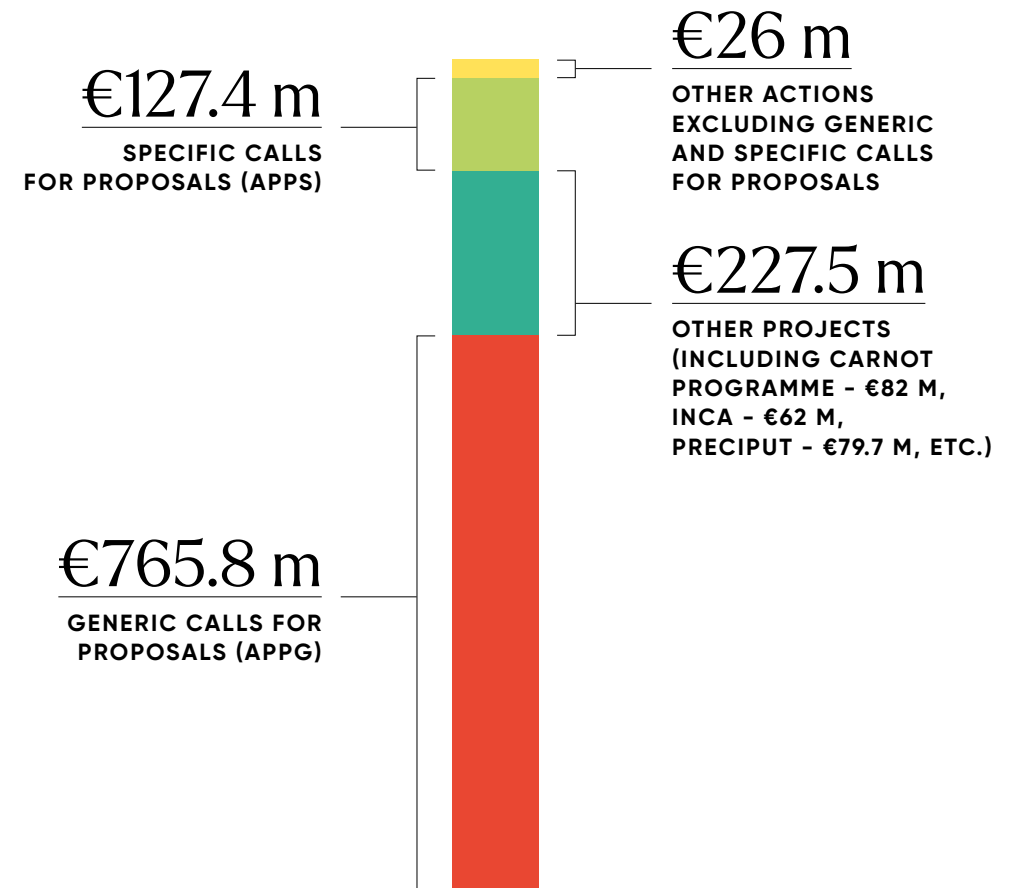
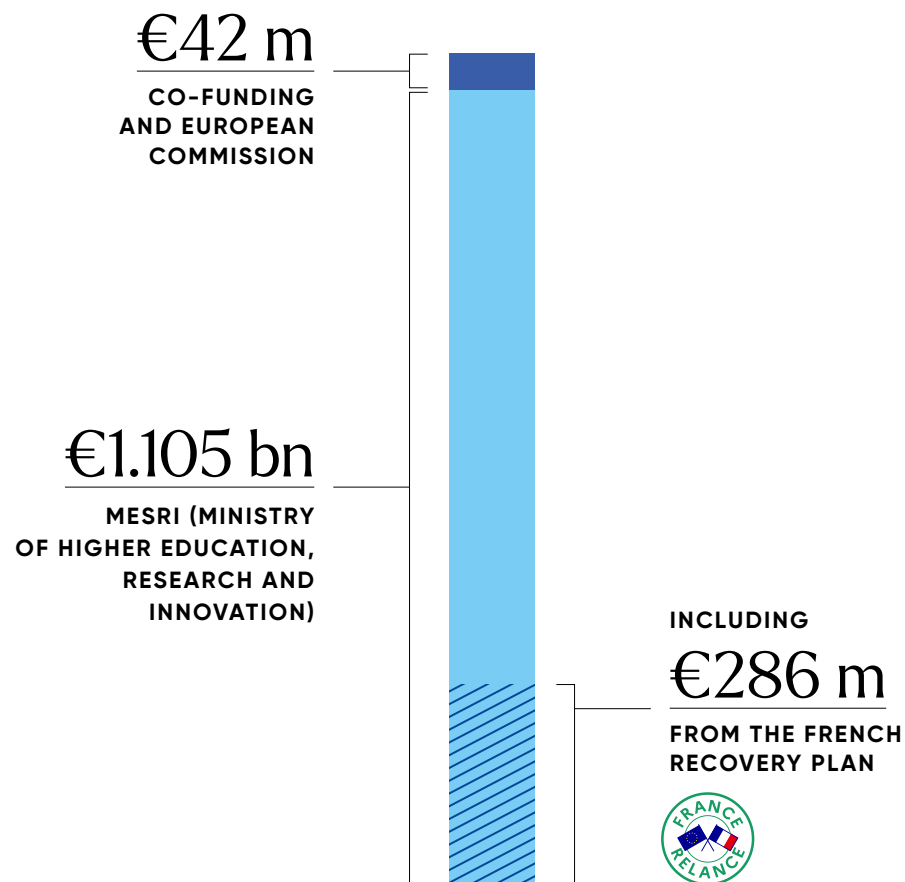
The payments made to the beneficiaries involved in 2021 research projects represented €816 million, an increase of €80.2 million compared to 2020.

Furthermore, in 2021 ANR was tasked with assisting the R&D Job Preservation measure set out in the Recovery Plan—to support and preserve the human research and development (R&D) capacities of enterprises—by providing them with young graduates and PhDs. In 2021, 949 staff members benefited from the measure, for a total amount under contract of €122.9 million, with 795 agreements being signed with enterprises in accordance with the provisions outlined and implemented by MESRI.

The 2021 funding budget is divided between the AAPG, Specific Calls for Proposals (AAPS), other actions excluding AAPG and AAPS, and projects excluding calls for proposals.

All calls for proposals, excluding Carnot and actions that do not fall under Generic or Specific Calls for Proposals, represented €893 million, or 77.9% of the operating budget, while other actions outside AAPG and AAPS represented €26 million, or 2.3% of the budget.

Other projects excluding calls for proposals (hosting preciput, INCa, Carnot programme, RTB) represented €227.5 million, or 19.8% of the budget.



↑ Source of the 2021 funding budget

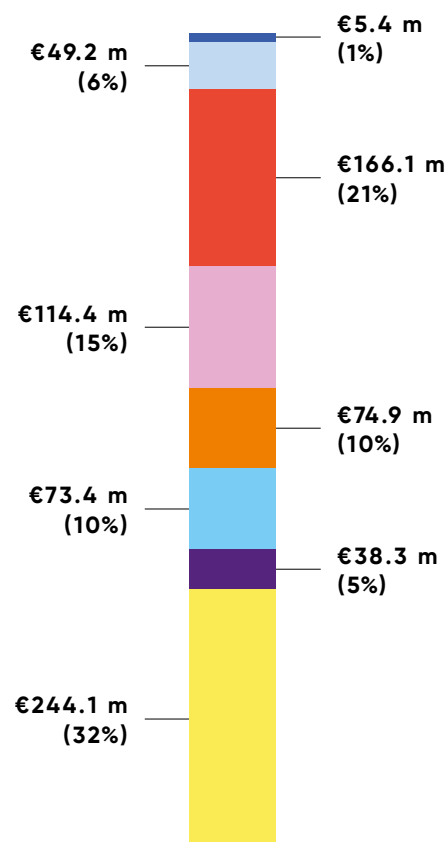
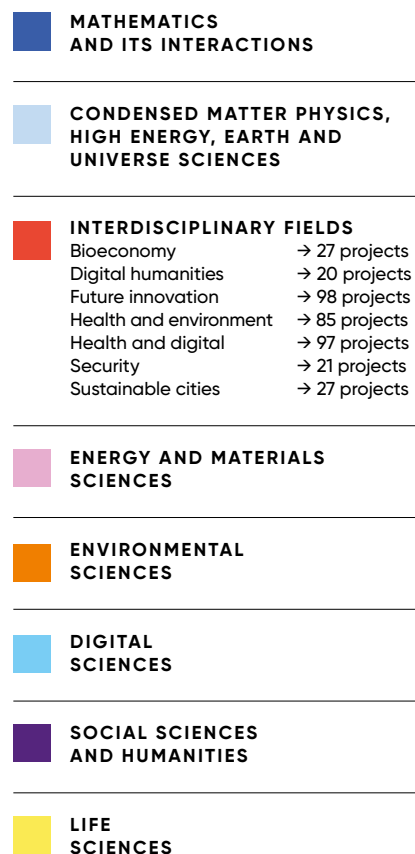
↑ Breakdown of the funding budget by commitment authorisations

The Generic Call for Proposals: prioritising free research

ANR supports non-targeted research projects on the initiative of researchers across all disciplines through the Generic Call for Proposals (AAPG), mobilising 85% of its credits.

In 2021, €765.8 million was dedicated to non-targeted research, as opposed to €499.7 million in 2020, an increase of 53.2%.

€765.8 m
DEDICATED TO AAPG



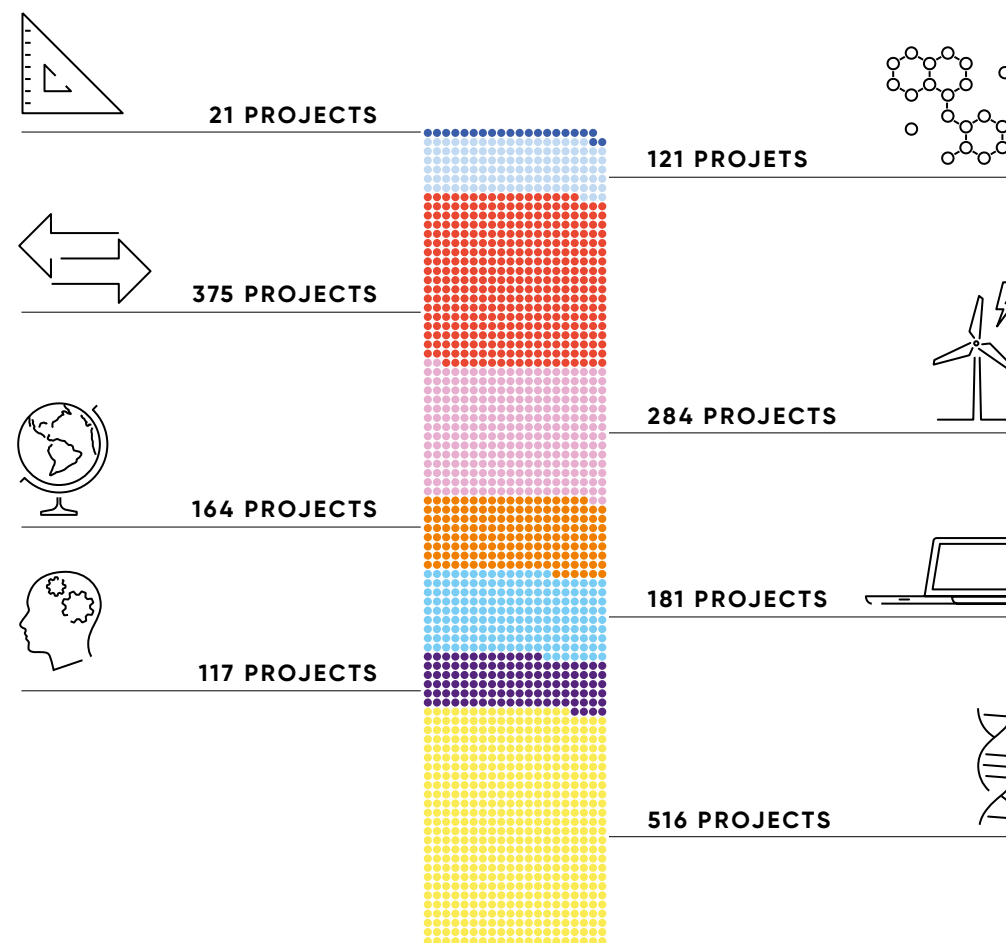
↑ Budgetary breakdown by disciplinary field

In 2021, the AAPG represented more than 77% of projects submitted to ANR. Following the evaluation process, 1,779 projects were selected – a significant increase from 1,229 in 2020. The PRC remains the major funding instrument, with 1,008 projects funded.

The remaining 771 were divided between JCJ (479), PRCE (159), and PRCI (133). The selection rate is now 22.7%, which falls in the European average for similar funding procedures.

22.7%
SELECTION RATE

1,779
PROJECTS SELECTED



↑ Number of projects funded through the 2021 AAPG

ANR is the operator for the Investments for the Future Programmes and the France 2030 Plan



The purpose of Investments for the Future Programmes (PIA), which were created in 2010, is to help develop the higher education and research ecosystem, to fund structuring projects over the long term, to boost employment, to strengthen productivity, and to increase the competitiveness of French research and enterprises. Launched in 2021, France 2030 furthers the commitments undertaken by the PIA, with a budget of €54 billion, including €20 billion from PIA 4, to encourage investment and innovation in priority areas that generate growth.

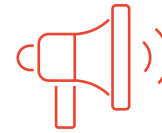
ANR's mission

Under the Decree relating to the organisation and operation of the Agency, it is tasked with "managing major government investment programmes in higher education and research and monitoring their implementation". ANR was appointed as a state operator for all actions regarding the PIA in 2010, and was confirmed as a state operator for the second programme in 2013 and for the third programme in 2017, in addition to France 2030 in 2021. To this end, the Agency manages selection, contract negotiation, funding, monitoring, auditing, and reviewing the impact of projects, actions, and programmes in higher education and research.

The specifics of France 2030

The management of France 2030 involves an evaluation carried out by predominantly international panels; selection criteria based on France 2030 priorities; and a final selection by the Prime Minister. These large-scale training, research, and equipment projects require substantial funding that can extend over more than 10 years.

DEPUIS 2010



80

calls for proposals launched



3,000

project proposals received



60,031

publications (as of year-end 2020)

€4.75 billion

Co-funding received by projects (as of year-end 2020)

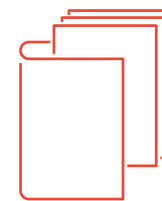
17.567 billion

Under contract (start of the PIA to year-end 2021)

€14.380 billion

Disbursed (start of the PIA to year-end 2021)

YEAR-END 2021



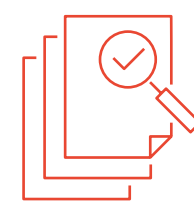
976

projects in ANR's portfolio



2,840

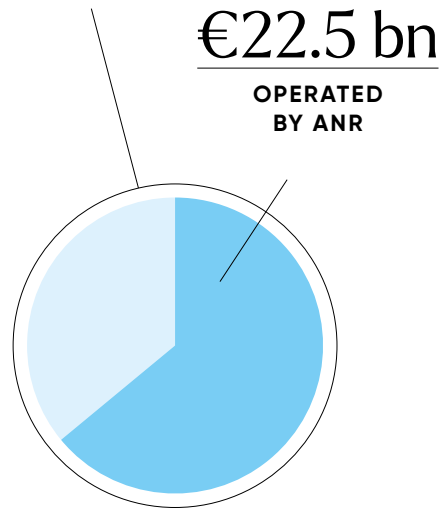
on-site visits



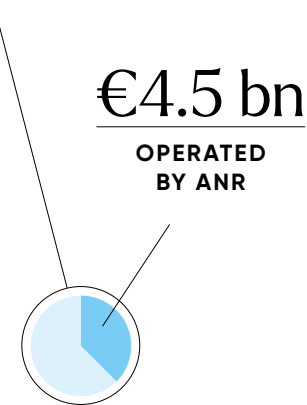
60

financial and accounting audits

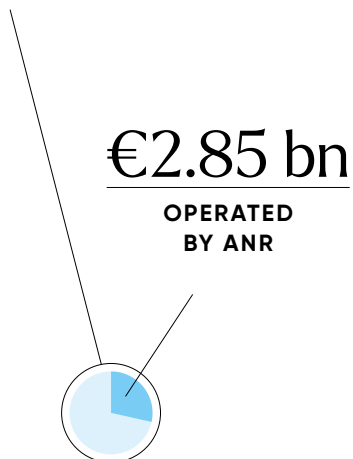
PIA 1
35 BILLION



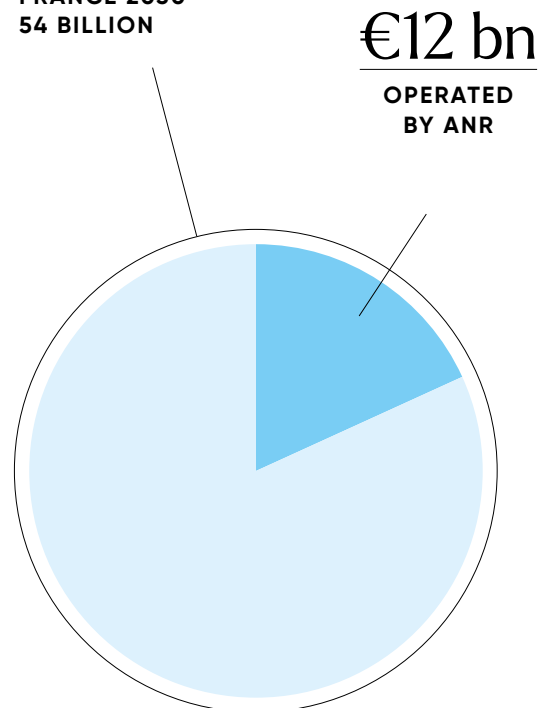
PIA 2
12 BILLION



PIA 3
10 BILLION



FRANCE 2030
54 BILLION



3 questions for ...
Bruno Bonnell

Secretary General for Investment, Bruno Bonnell is in charge of steering France 2030, the French government's new investment plan.

01 What are the major objectives of France 2030?

France 2030 embodies the French government's intention to regain an advantage in ten strategic sectors (nuclear, health of the future, industrial decarbonisation, electric and hybrid vehicles, etc.). France 2030 will allocate €54 billion in total, including €20 billion from the 4th Investments for the Future Programmes.

From basic research to the emergence of an idea to the production of a product or new service, France 2030 will boost "French Genius" throughout the country in technology transfer institutions, enterprises, and universities.

We want to help scientists and industrial actors catch up or even overtake international competition in certain key sectors such as green hydrogen, cultural and creative industries, or digital technologies. Finally, we want to resume a great tradition of exploration by investing in space and the deep seabed. To achieve these objectives, France 2030 will support the creation of training courses to guide young people and workers towards the jobs of tomorrow.

02 How does France 2030 relate to previous PIAs?

France 2030 is both a continuation and a departure from past Investments for the Future programmes. Like PIAs, the goal is to support French innovation, but France 2030 wants to go deeper and further. The returns on France 2030 investments will include extra-financial benefits such as job creation, reduction of CO₂ emissions, and enhanced technological independence. Unlike PIAs, France 2030 will fund the innovation and industrialisation of innovative solutions, and put them at the service of the greatest number of people. We are devoting 50% of the plan to emerging innovation leaders, and we are committed to exclusively supporting environmentally friendly projects. We are also allocating 50% of the plan to decarbonise the economy.

03 What is your view of the role played by operators in this programme?

The four major historic operators for the Investments for the Future Programmes—Bpifrance, the Caisse des Dépôts - Banque des territoires, ADEME, and of course the French National Research Agency—are an integral part of implementing France 2030. They are at the heart of this strategy, closely connected to both the field and the concerns of beneficiaries. Acting as genuine local contacts, operators will use their detection, instruction, and support skills to make France 2030 thrive. This is our conviction, and it is borne out by the trust expressed by the French government.

“Like PIAs, the goal is to support French innovation, but France 2030 wants to go deeper and further”

ANR dedicated to the coherence of the French research ecosystem

ANR is consulted regularly, offering various institutions integrity and a robust evaluation and selection process, with expertise in negotiating contracts and monitoring projects. In addition to being an operator, ANR plays a more structural, advisory, and co-funding role. It supports the roll out of its partners' scientific policies by ensuring they are coherent with respect to the national or international research landscape.

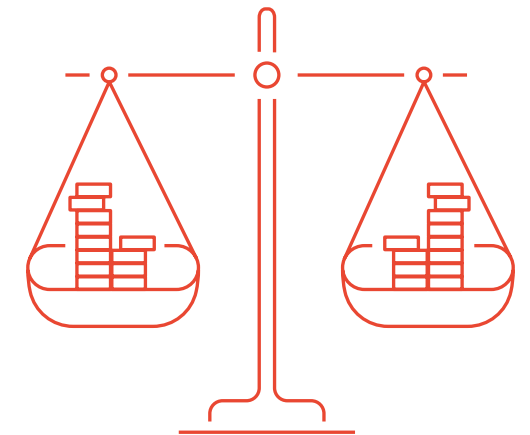
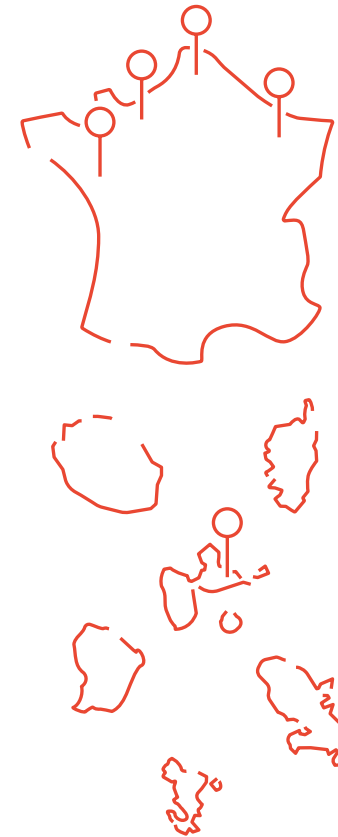
ANR is the ally of institutions seeking to mobilise research

In its 15 years of existence, ANR has established many partnerships with institutions seeking to pursue research beyond their own area of expertise in order to fulfil their missions. These institutions provide funding for research within their areas of interest, and entrust ANR with coordinating calls for proposals, as well as ensuring that the best projects are selected in accordance with international research standards.

An exemplary partnership developed with the AID
The long-term partnership developed with the Defence Innovation Agency (AID) is exemplary in this regard. The distribution of tasks through a project's life cycle fulfils the AID's needs regarding its programming, based on which ANR evaluates the projects; the final funding decision is made by the funding agency, in this case the AID. ANR lends its full expertise in selecting the best projects, and relieves the AID of the administrative part of the agreement. Project monitoring is a joint effort. The most interesting and promising projects, already a part of ANR's portfolio, automatically switch to the maturation programme, which is operated along similar lines.

ANR is increasingly involved with the Regions

By the same reasoning, ANR has been developing partnerships with regional councils for the past three years: Guadeloupe, Normandy, Pays de la Loire, Hauts-de-France, and Grand Est. Initially approached as an operator, ANR is increasingly involved with these local and regional authorities to assist with the coherence of various levels of research—regional, local, national and international—as well as to make procedures easier for laboratories and enterprises seeking funding.



For every €1 of regional funding, more than €1 is funded by ANR
Co-funding with ANR creates a strong financial leverage effect for regions. In 2021, ANR launched a partnership with the Normandy and Hauts-de-France Regions, the Research-Action Call for Proposals on Industrial Risks (RA-SIOMRI). The purpose of this call was to identify innovation skills in industrial or technological risk management in dense urban settings, along with crisis management in the event of a disaster, with a view to mobilising national skills in response to a regional issue. ANR managed the scientific evaluation process for the 25 projects. The €1.2 million budget allocated by ANR (out of a total budget of €2.3 million) helped fund national and territorial stakeholders, with significant added value for partner regions: for every €1 of regional funding, more than €1 is funded by ANR.



3 questions for ... Emmanuel Chiva

Emmanuel Chiva is the Director of the French Defence Innovation Agency (AID) of the Ministry of Armed Forces, and holds a PhD in biomathematics. He has been working in artificial intelligence and military simulation for over 20 years.

01 ANR and the AID/DGA have been working in partnership since 2006. What makes it special?

The research programmes set up when ANR was established in 2006 were quickly identified as having both civilian and military interests. To access the projects supported by these programmes, and to influence the programming content, the French Directorate General for Armaments (DGA) began partially contributing to their funding in 2006. In November 2010, the DGA sought to boost and ensure its long-term collaboration with ANR by signing a General Cooperation Agreement. When the AID was founded in 2018, a new agreement consistent with the previous ones was entered into for 4 years. The partnership is currently structured around three major actions: the ASTRID research programme, the ASTRID Maturation programme, and the AID's involvement in Programming Advisory Panels. Other specific actions were also launched, such as chairs or challenges carried out by ANR, leading to co-funding.

02 Both Agencies have recently developed calls for proposals on specific themes (artificial intelligence, robotics, etc.). How did this come about?

The Ministry of Armed Forces co-funded ANR programming until 2020. From that point onward, within the framework of a new strategy to invest in research, the AID decided to support projects directly in line with government innovation priorities. We created a new and more suitable thematic programme, based on the ASTRID programme. It involves two calls for proposals per year, and supports four to five projects by theme. This year, the two themes are energy and cognitive warfare. The budget allocated to this thematic programme in 2022 will be €4 million.

03 Given the AID's defence innovation strategy, what are the prospects for this cooperation?

In order to prepare for the future, beyond the foreseeable military requirements of the next 15 years, our investments in innovation and exploratory research must be strengthened. The AID supports projects with a low level of technology maturation on emerging and potentially disruptive themes.

The Ministry also wants to strengthen its research investment by encouraging synergy between programmes and stakeholders, including academic research and industry, in order to accelerate and exploit the results. The privileged partnership between the AID and ANR fully meets these goals, thereby helping to maintain and increase synergies with civilian-oriented research.

“The privileged partnership between the AID and ANR helps maintain and increase synergies with civilian-oriented research.”



3 questions for ... Sylvie Gustave-dit-Duflou

Sylvie Gustave-dit-Duflou holds a PhD in neuroscience and is the Vice President of the Guadeloupe Region, the first local authority to have signed a Cooperation Agreement with ANR. She also chairs the Governing Board of the French Biodiversity Agency.

01 What are the issues specific to Guadeloupe?

Guadeloupe is characterised by its tropical island environment that is particularly vulnerable to the effects of climate change. Our support for the resilience of our territory is what guides our research policy. Consequently, various actions were initiated, such as investing in agroecology to strengthen our food self-sufficiency, and supporting the development of predictive models for extreme climate events. Fighting against the invasion of the sargassum seaweed that is damaging ecosystems throughout the Caribbean obviously remains a major health, environmental, and economic challenge, as does the implementation of the action plan to combat chlordecone pollution, an insecticide that is believed to cause prostate cancer. Health is our primary focus. We are funding both research on major genetic diseases such as sickle-cell anaemia, as well as studies to keep cancer and epidemiological records on neurological diseases. We have also developed the MALIN project (Infectious diseases in tropical island environments), bringing together around ten partners, as part of a One Health approach.

02 How is ANR supporting you in the development of your regional research strategy?

Guadeloupe was the first region to reach out to ANR for its expertise in evaluating scientific projects within the framework of calls for proposals. We receive active support implementing assessments by national and international peer reviewers, as well as in monitoring projects and interactions with research teams. This partnership has strengthened our broader research policy all while confirming our credibility, including with the European Commission, which is in charge of assessing our Operational Programme every six years.

03 What calls for proposals have you launched as part of your cooperation with the Agency? And those to come?

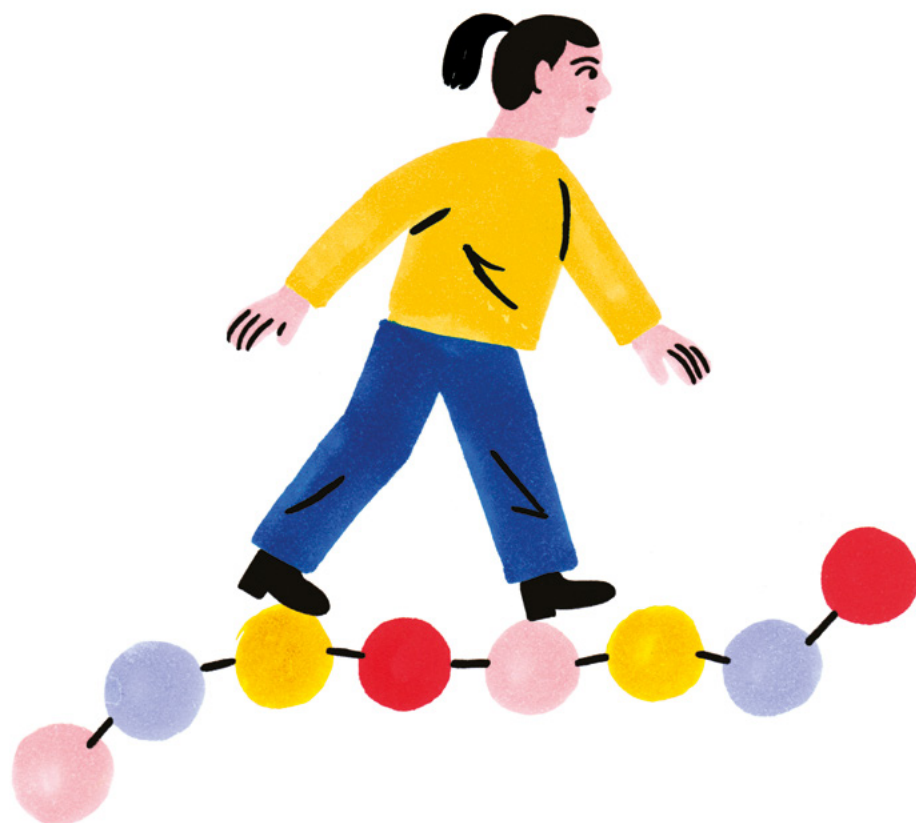
We launched two joint calls for proposals with ANR, as part of the ERDF-ESF Operational Programme for the Guadeloupe region 2014-2020, each receiving €10 million in funding. For a territory of 400,000 inhabitants like Guadeloupe, this is indicative of the importance given to research and innovation! Furthermore, two “Sargassum” calls for proposals bringing together ANR and other local authorities of the Caribbean basin were launched in 2019 and 2021.

More recently, in March 2022, we launched a call for proposals on chlordecone, in partnership with the regional authority of Martinique as part of the National Chlordecone Plan 4.

“Our partnership with ANR strengthens our research policy by confirming our credibility, including with the European Commission.”



20 scientific
projects



FLUOROPEP

An innovative strategy to improve peptides for therapeutic purposes

FLUOR BIOMEDICAL INNOVATION DRUGS PEPTIDES GPCR

The development of peptides as drugs is limited due to their rapid elimination from the body. To increase their stability in blood, the team has altered peptides of therapeutic value by incorporating a fluorinated part within peptides to force them to self-associate, thereby reducing their sensitivity to enzymatic degradation. The efficiency and biocompatibility of this approach were demonstrated with the apelin peptide. Fluoridation resulted in a significant increase in its stability and effectiveness in the body, leading to the discovery of a new strategy for the treatment of hyponatremia and arterial hypertension. As part of the FLUOROPEP project, the patented strategy was successfully expanded to other peptides by targeting G protein-coupled receptors, thereby opening new therapeutic prospects, including for the treatment of pain.

©
In close collaboration with technology transfer organisations, the FLUOROPEP strategy is used to develop peptide drug candidates for treating metabolic diseases such as diabetes and obesity.

Project	New Fluorocarbon conjugates to increase metabolic stability of GPCR peptides	Partners	– Laboratory of Bioimaging and Pharmacology, University of Strasbourg – Laboratory of Design and Application of Bioactive Molecules CNRS / University of Strasbourg
Programme	AAPG - PRC		– Central neuropeptides in the regulation of body fluid and cardiovascular functions
Edition	2016		– Centre for Interdisciplinary Research in Biology (CIRB), Collège de France/INSERM / CRNS
ANR grant	€536,232		– Biotechnology and Cell Signalling, Strasbourg Graduate School of Biotechnology/CNRS/University of Strasbourg
Duration of the project	48 months		
Coordinator	Dominique Bonnet		
Website	anr.fr/Project-ANR-16-CE18-0030		
Coordinating institution	Laboratory for Therapeutic Innovation – LabEx MEDALIS, University of Strasbourg	Main publication	Flahault, A., Girault-Sotias, P.M., Keck, M., et al. «A metabolically stable apelin-17 analog decreases AVP-induced antidiuresis and improves hyponatremia.» Nature Communications 305 (2021). doi.org/10.1038/s41467-020-20560-y
Project region	Grand Est		

REPAS

Reliable and privacy-aware software systems through bisimulation metrics



SOFTWARE DESIGN METHODS AND TOOLS

PRIVACY PROTECTION

The REPAS project explored the probabilistic aspects of modern software systems, namely those aspects that are uncertain and unpredictable, either by their very nature or due to a lack of knowledge. These aspects, which are ever-present in current software systems, are essential for the security and privacy of sensitive data. The project defined new notions of distance between probabilistic programmes, and demonstrated how these notions can be applied to ensure privacy (differential) and to prevent data leakage. New logics and algebras were defined to characterise the notions of distance for probabilistic programmes.

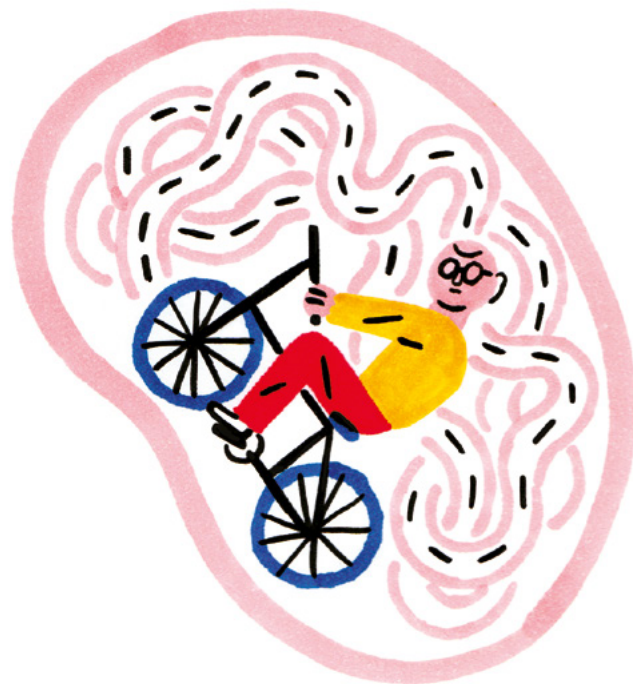


This effort led to two new projects, including an ERC for the coordinator. Several tools developed as part of the project are now being used for didactic purposes in the following universities: Paris Diderot University (France), Florida International University (USA), University of Athens (Greece), Macquarie University (Australia), University of Belo Horizonte (Brazil).

Project	Reliable and Privacy-Aware Software Systems via Bisimulation Metrics	Project region	Île-de-France
Programme	AAPG - PRC	Partners	– INRIA COMETE – INRIA FOCUS – ENS Paris – ENS Lyon
Edition	2016	Main publication	Alvim, M. S., Chatzikokolakis, K., McIver, A., Morgan, C., Palamidessi, C., & Smith, G. (2020). The Science of Quantitative Information Flow. (Information Security and Cryptography). Springer, Springer Nature. doi.org/10.1007/978-3-319-96131-6
ANR grant	€336,392	Software products	www.lix.polytechnique.fr/comete/Projects/REPAS/software.html
Duration of the project	48 months	Coordinating institution	Inria - Saclay Research Centre
Coordinator	Catuscia Palamidessi		
Website	www.lix.polytechnique.fr/comete/		

CogAging

How is normal cognitive aging moderated by certain variables?



MEMORY PROBLEM SOLVING STRATEGIES COGNITIVE AGING

The purpose of the CogAging project was to study, through various experiments in arithmetic and episodic memory, the mechanisms by which cognitive aging moderators offset, reduce, or increase the decline of cognitive performance among the elderly. The research helped identify conditions under which age-related stereotype threat effects—and the effects of prior task success or failure—are observed. They also helped determine the mechanisms responsible (through strategic variations) for these effects.

©
The project helped alert the researcher community working on cognitive aging to the importance of strategic variations for understanding the effects that moderators have on aging.

Project	Moderators of Cognitive Aging: the roles of strategies	Project region	Provence-Alpes-Côte d'Azur
Programme	AAPG - PRC	Partner	Cognition and Learning Research Centre, University of Tours François Rabelais
Edition	2017	Main publication	Nicolas, P., Lemaire, P., Régner, I. "When and how stereotype threat influences older adults' arithmetic performance: Insight from a strategy approach." <i>Journal of Experimental Psychology: General</i> 149 (2020). doi.org/10.1037/xge0000647
ANR grant	€260,776		
Duration of the project	42 months		
Coordinator	Patrick Lemaire		
Coordinating institution	Laboratory of Cognitive Psychology, Aix-Marseille University / CNRS		



SchoolBias

The role played
by self-evaluation bias
in academic success

ACADEMIC ADJUSTMENT ILLUSION OF (IN)COMPETENCE
TEACHER JUDGMENTS ACADEMIC SELF-PERCEPTION

The SchoolBias project took an interest in how students self-assess their academic competence, by focusing on the difference between their true potential and their self-evaluation. The team studied this self-evaluation bias in basic skills learning, and its consequences on academic adjustment. Among students, dynamic bias as well as its effects on basic learning skills were examined at various stages of schooling. Among teachers, the team observed how they judged students with a positive or negative biased evaluation of their academic competence. Finally, the team extended its research to include the impact of these beliefs in other cultures. To this end, twenty-two studies were carried out in class, using mixed methodologies. The results indicate that overestimating one's competence is beneficial to the student, while underestimating it is detrimental to their academic adjustment.

©
Further actions are being contemplated
to better address and restore the confidence
of students with negative and/or negatively
biased self-perceptions.
Digital resources intended for teachers
are currently being created.

Project	Self-evaluation bias of school competence: risks or opportunities for future academic success?	Project region	Auvergne-Rhône-Alpes
Programme	AAPG-PRC	Partners	– Board of Education of the Grenoble Academy – Research Unit on Affectivity, Motivation and Academic learning (URAMAS), University of Quebec, Montreal, Canada – Cognition, Languages, Language and Ergonomics Laboratory -Work and Cognition Lab (CLLE -TLC), Toulouse Jean-Jaurès University / CNRS
Edition	2016	Main publication	Jamain, L., Bouffard, T., & Pansu, P. "The link between self-evaluation of competence bias and academic performance: the role of self-regulation and student understanding the teacher's expectations " Canadian Journal of Education No. 43 (2020) . journals.sfu.ca/cje/index.php/cje-rce/ article/view/4087
ANR grant	€128,991		
Duration of the project	54 months		
Coordinator	Pascal Pansu		
Établissement coordinateur	Laboratory of Research on Learning in Context (LaRAC), Grenoble Alpes University		
Website	larac.univ-grenoble-alpes.fr/recherche/contrats-recherche-actuels/schoolbias		



00111001

Synthesis and sequencing of information-containing molecules

DIGITAL POLYMERS PRECISION POLYMER POLYMER CHAINS
 SEQUENCING MASS SPECTROMETRY DATA STORAGE

The main objective of the 00111001 project was to develop synthetic polymers to store digital information. Prior to the start of the project, most of the efforts in this field focused on DNA, a polymer that is not always optimal for non-biological applications. The synthetic alternatives studied by this project are poly(phosphodiester)s. When two different monomers 0 and 1 are used to create these polymers, binary information can be written into the chains that are formed. The project reached unprecedented limits in this area of research, as poly(phosphodiester)s containing up to 440 bits of information per chain—the highest storage capacity ever described for a synthetic macromolecule—were prepared and sequenced. The resulting polymers have a storage capacity of 3 bits/monomer, which is higher than that of DNA.

©
 The project offers substantial prospects for storing big data, including cold storage. These new leads will be explored in two new projects funded by ANR and France 2030: the collaborative Digital LbL project (2019-2023), and the Exploratory MolecuArXiv PEPR (2022-2028).

Project	Synthesis and sequencing of information-containing macromolecules	Coordinator	Jean-François Lutz
Programme	AAPG - PRC	Coordinating institution	Charles Sadron Institute, CNRS
Edition	2016	Project region	Grand Est
ANR grant	€642,000	Partners	– Institute of Genetics and Molecular and Cellular Biology (IGBMC), University of Strasbourg / CNRS / Inserm – Institute of Radical Chemistry (ICR), Aix-Marseille University / CNRS
Duration of the project	48 months		

M6fossils

Microscopic to macroscopic evolution of early life on Earth



EVOLUTION MICROORGANISMS OXYGENATION

Rocks may partially preserve cells from microscopic and macroscopic organisms over periods of time up to a billion years. The M6fossils project has critically tested a wide range of state-of-the-art cellular and microscopic characterisation techniques, including some that had rarely or never been applied. The research identified the nature of some of the oldest micro-fossils, including specimens about 2.3 billion years old, and also helped to identify some of the oldest photosynthetic micro-organisms. This study provided new criteria for identifying fossils in the oldest rocks. Analytical developments were pursued to analyse organic molecules in micro-scale fossils.



The analytical developments of this project provide a promising outlook for multidisciplinary research, from "molecular" palaeontology to the characterisation of extraterrestrial materials (meteorites, asteroids, Mars).

Project	Micro- to nanoscale molecular, mineralogical, morphological and isotopic identification of micro and macro-fossils	Partners	<ul style="list-style-type: none"> – Laboratory of Physics of Lasers, Atoms and Molecules (PhLAM), CNRS / University of Lille – Materials and Transformations Unit (UMET), CNRS/University of Lille/Centrale Lille, Chevreul Institute, INRAE – Solid Catalysis and Chemistry Unit (UCCS), CNRS/University of Lille/University of Artois/Centrale Lille – Paris Globe Institute of Physics – Biogeosciences, UMR 6282 – French Institute of Mineralogy, Physics of Materials and Cosmo-chemistry (IMPMC), Sorbonne University / CNRS / French National Museum of Natural History / JRD – Ghent University
Programme	AAPG - JCJC		
Edition	2015		
ANR grant	€340,000		
Duration of the project	69 months		
Coordinator	Kevin Lepot		
Website	m6fossils.univ-lille.fr		
Établissement		Main publication	Lepot, K., Addad, A., Knoll, A. et al. "Iron minerals within specific microfossil morphospecies of the 1.88 Ga Gunflint Formation." <i>Nature Communications</i> 8 (2017). doi.org/10.1038/ncomms14890
Coordinating institution	Laboratory of Oceanology and Geosciences, CNRS / University of Lille / University of the Littoral Opal Coast / JRD		
Project region	Hauts-de-France		



HypMedPro

Modern obstetrics:
transnational comparison
of risk cultures, technological
trajectories, feminist
mobilisations, and institutional
changes

TECHNOLOGICAL CHILDBIRTH TRANSNATIONAL APPROACH

INSTITUTIONAL CHANGES PUBLIC CONTROVERSIES

FEMINIST CRITICS OBSTETRIC VIOLENCE

The HypMedpro project focused on the trajectories of the most popular obstetrical techniques and practices in five developed and “emerging” countries: France, Canada, Italy, Turkey, and Brazil. Brazil and Turkey are among the countries with the highest C-section rates in the world, as is the case for Italy in Europe. Quebec is the Canadian province with the highest epidural rate, close to the French level. The singularity of these trajectories in the field was highlighted based on health-care systems, the regulatory framework, medical knowledge, and the impact of activism. The team also reported on the dynamic demarcations between the natural and artificial, the medical and biological, and the modern and archaic in the five countries studied.

©
The theoretical and empirical knowledge resulting from the project strengthened dialogue between caregivers and those receiving care. It also provided a better understanding of the controversies arising from certain obstetrical techniques and practices, with a view to adjusting regulations.

Project	The (over)medicalisation of Childbirth as a public problem: material trajectories, public controversies and institutional changes	Coordinating institution	EHESS
		Project region	Île-de-France
Programme	AAPG - JCJC	Partners	– Bilgi University, Istanbul, Turkey – Oswaldo Cruz Foundation, Brazil – University of Lausanne, Switzerland
Edition	2016		
ANR grant	€195,031	Main publication	Special issue of the journal entitled “The impact of technology on pregnancy and childbirth: transnational perspectives on risk” (<i>Health, Risk & Society</i> , vol. 21, n°3-4, 2019), coordinated by S. Topçu, I. Löwy, P. Brown, K. Coxon. www.tandfonline.com/toc/chrs20/21/3-4
Duration of the project	36 months		
Coordinator	Sezin Topçu		
Website	hypmedpro.hypotheses.org		



BioACe

Impact of biofuels on the aging of conventional fuels

BIOFUELS ENERGY AGING

The European Union encourages the use of biofuels (or mixtures), although their short life cycle hampers their use, especially in aviation. The addition of biofuels to "conventional" fuels often has negative and unpredictable effects on the aging process of mixtures. While there are many studies on the combustion of biofuels and mixtures, their ageing has never been fully studied. The BioACe project addressed this issue. The project's experimental component revealed that alcohol-based biofuels are the only ones that increase the ageing resistance of a typical conventional fuel. The simulation component led to the development of a numerical method that can simulate and predict the effect that adding biofuels has on the ageing of conventional fuels.

©
One of the promising prospects of this effort is the computer-assisted development of antioxidants that can slow the biofuel ageing process, with a view to promoting the use of biofuels, especially in aviation.

Project	Impact of biofuels on the aging of conventional fuels	Coordinating institution	Process Engineering and Reactions Laboratory (LRGP), CNRS / University of Lorraine
Programme	AAPG - JCJC	Project region	Grand Est
Edition	2018	Main publication	Le, M.D., Warth, V., Giarracca, L., et al. Development of a Detailed Kinetic Model for the Oxidation of n-Butane in the Liquid Phase. <i>Journal of Physical Chemistry B</i> 125 (2021) doi.org/10.1021/acs.jpcc.1c02988
ANR grant	€215,066	Coordinator	Baptiste Sirjean
Duration of the project	24 months	Website	bioscope.univ-lorraine.fr



HerbiFun

Fungal plant pathogens as a source of novel herbicides

BIOHERBICIDES FUNGAL GENOMICS NEW NATURAL MOLECULES

Fungal plant pathogens produce secondary metabolites (SMs) during infection that either kill or manipulate plant cells. The purpose of the HerbiFun project was to produce infection-specific SMs in vitro, and to discover new natural molecules with herbicidal activity—a crucial research field in agriculture. A computer application was developed to predict SM synthetic genes in fungi. Several genetic and pharmacological strategies were implemented to overcome repressive mechanisms through the chromatin structure, as well as to activate the transcription of biosynthetic genes in vitro. Finally, chromatographic chemical profiling, coupled with phytotoxicity tests on a series of cultivated and self-propagating model plants, used bio-guidance to help identify SMs with herbicidal potential, in isolation or in synergy with one another.

©
The knowledge acquired on secondary metabolite synthesis gene repertoires and their regulation — in addition to the computer application and bio-guidance strategy developed — will be applied to screen a wider range of natural products that may constitute novel bioherbicides.

Project	Fungal plant pathogens as a source of novel herbicides	Project region	Île-de-France
Programme	AAPG - PRCE	Partners	– Institute of Chemistry Of Natural Substances (ICSN), CRNS – Institute for Integrative Biology of the Cell (I2BC), Paris-Saclay University – De Sangosse
Edition	2016	Main publication	Oliveira, L. et al. <i>CusProSe: A customized protein annotation software with an application to fungal secondary metabolism genes</i> (forthcoming).
ANR grant	€365,176		
Duration of the project	36 months		
Coordinator	Muriel Viaud		
Website	www6.inrae.fr/herbifun		
Coordinating Institution	UMR BIOGER -Biology and risk management in agriculture INRAE		

ResBati

Measuring the thermal resistance of building envelopes



CONSTRUCTION MANAGEMENT AND RESTORATION OF EXISTING ASSETS INSULATION
BUILDING ENERGY RENOVATION MEASUREMENTS

The ResBati project is part of an effort to make buildings more energy efficient. The objectives set by successive thermal regulations cannot currently be checked in the field, given the lack of a characterisation method that works in all circumstances. The ResBati project helped create a measuring tool for the thermal resistance of building envelopes in the field. This is based on two prototypes: one uses infrared thermography as a measuring instrument, while the other uses thermal sensors positioned against the wall to be characterised. The tool has been tested on residential buildings under controlled conditions. The instrument complies with specifications that simplify its use by professionals at various stages of the construction process, thereby defining or checking the insulation work completed. At this stage, the instrument is functional for walls with internal insulation, the most popular construction method in France.



Applications include on-site self-inspection, work acceptance (new or renovation), and building diagnostics. The instrument's maturation will seek to develop a commercial version. The new ResBioBat research project will conceive other measuring tools adapted to highly insulated envelopes, including bio-based materials, or those with complex geometry.

Project	In-situ measurement of thermal resistance of building envelopes	Coordinating institution	Centre for Studies and Research in Thermal Environment and Systems (CERTES), Paris-Est Créteil University
Programme	AAPG - PRCE	Project region	Île-de-France
Edition	2016	Partners	<ul style="list-style-type: none"> – French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR) – Cerema-DTerEst – French National Laboratory of Metrology and Testing (LNE) – Scientific and Technical Centre for Building (CSTB) – Themacs Engineering – AFNOR
ANR grant	€724,000		
Duration of the project	36 months		
Coordinator	Laurent Ibos		
Website	hypmedpro.hypotheses.org		

MATELHO

Innovative materials and processes for hydrogen/oxygen electrolysers



Hydrogen energy is already technologically and economically viable in high-growth industrial markets due to the energy transition. This applies to flame and caloric production markets in which fossil fuels are being replaced by entirely decarbonised hydrogen-based fuel, produced by electrolysis on-site and on demand under optimum safety and cost conditions. In association with Bulane SAS and the Charles Gerhardt Institute of Montpellier, the MATELHO LabCom helped develop materials and processes for the new generation of electrolysers industrialised and marketed by the SME, in an effort to meet the growing demand for hydrogen energy.

©
As new mass markets emerge, such as thermal processes and hybrid hydrogen gas boilers, MATELHO continues to develop more reliable and less expensive miniature devices through disruptive manufacturing processes.

ELECTROLYSER HYDROGEN/OXYGEN FLAME HYDROGEN ENERGY

Project	Innovative materials and processes for hydrogen/oxygen electrolysers	Coordinators	Frédéric Favier and Nicolas Jerez
Programme	LabCom	Coordinating institution	Institute of Molecular and Materials Chemistry - Charles Gerhardt Institute, CNRS / University of Montpellier / Graduate School of Chemistry of Montpellier
Edition	2018		
ANR grant	€300,000	Project region	Occitanie
Duration of the project	36 months	Partner	Bulane SAS

BRIDGET

Risk and protective factors of neurodegenerative diseases



EPIDEMIOLOGY GENOMICS BRAIN IMAGING ALZHEIMER'S DISEASE
NEUROSCIENCE CEREBRAL SMALL VESSEL DISEASE

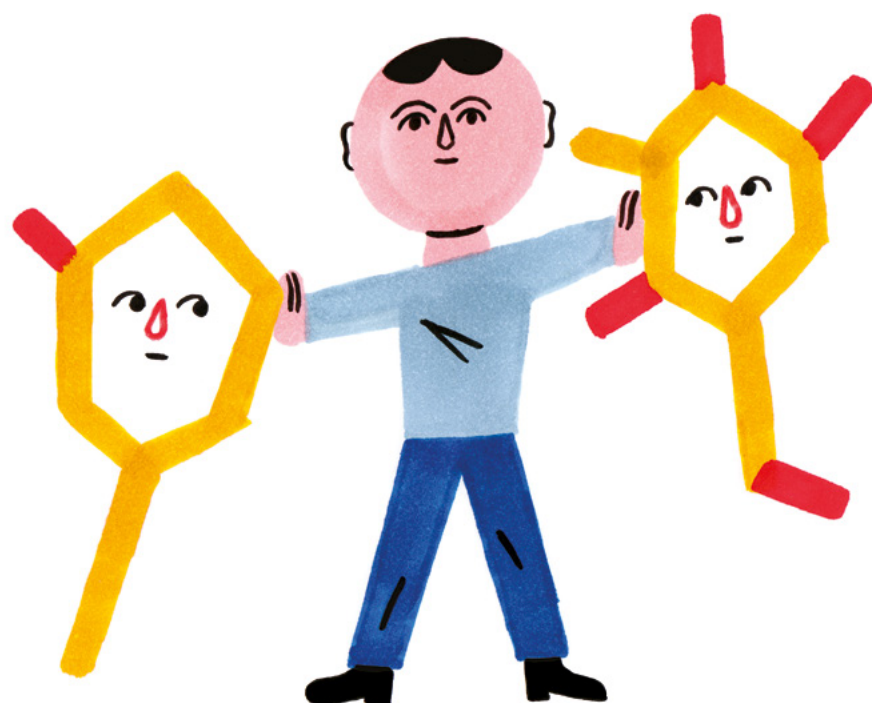
The biological events leading to Alzheimer's disease (AD) begin years before the appearance of clinical signs. In international cohorts (more than 35,000 volunteers), the team in charge of the BRIDGET project measured various new and established markers of brain ageing via magnetic resonance imaging (MRI), in order to describe how they evolve and how they can predict the risk of AD. More than 200 genetic variants were identified—in association with structural brain changes such as alterations in the brain's white matter or reduced brain surface thickness—thereby helping accelerate the identification of new therapeutic targets. The team found that these same genes are associated with changes in brain structure as early as the age 20, and demonstrated a causal link between MRI markers of cerebrovascular ageing and the risk of AD, suggesting preventive opportunities.

©
Thanks to additional funding, the team is pursuing its investigations by examining new markers in diffusion MRI, and combining genomic tools with other molecular markers (epigenetic, metabolomic, proteomic).

Project	Brain Imaging, cognition, Dementia and next generation GEnomics: a Transdisciplinary approach to search for risk and protective factors of neurodegenerative disease	Partners	– Greifswald Medical School, Germany – University of New South Wales, Australia – Medical University of Graz, Austria – McGill Genome Center, Canada – Erasmus MC University Medical Center, The Netherlands – University of Edinburgh, United Kingdom – King's College, London, United Kingdom
Programme	ERA-NET JPCofuND		
Edition	2015		
ANR grant	€199,992		
Duration of the project	65 months	Main publication	Sargurupremraj, M., Suzuki, H., Jian, X. et al. "Cerebral small vessel disease genomics and its implications across the lifespan." <i>Nature Communications</i> 11 (2020). doi.org/10.1038/s41467-020-19111-2
Coordinator	Stéphanie Debette		
Website	bridget.u-bordeaux.fr		
Coordinating institution	University of Bordeaux		
Project region	Nouvelle Aquitaine		

Glycomime

Trapping bacteria with sugar: designing anti-infective glycomimetics



ANTI-INFECTIVES MEDICINAL CHEMISTRY
GLYCOMIMETICS SCREENING GLYCOBIOLOGY

Pathogenic micro-organisms (viruses, bacteria, fungi and parasites) use the sugars present in our tissues for recognition, adhesion, and the infection process. The GLYCOMIME project sought to develop small molecules that inhibit pathogen surface receptors, called lectins, from binding with the sugars present in our tissues. Through a multidisciplinary approach combining the virtual and experimental screening of chemical libraries, chemical synthesis, and biophysical analysis, the consortium obtained new active compounds and identified new interaction sites in bacterial lectins. They often include calcium ions, which are required to bind to host sugars. A new strategy was developed to inhibit lectins by developing glycomimetic pharmacophores that bind to calcium ions.

©
New active fragments must now be optimised to increase their activity and specificity. Classical medicinal chemistry approaches were explored, along with their combination into multivalent molecules.

Project	Development of non-carbohydrate glycomimetics to fight against bacterial lectins	Partners	– Laboratory for Therapeutic Innovation University of Strasbourg – Helmholtz Institute for Pharmaceutical Research Saarland, Germany – Structural Glycobiology, Max Planck Institute, Germany
Programme	ANR-DFG bilateral cooperation		
Edition	2017		
ANR grant	€288,523	Main publication	Kuhaudomlarp, S., Siebs, E., Shanina, E., Topin, J., Joachim, I., da Silva Figueiredo Celestino Gomes, P., Varrot, A., Rognan, D., Rademacher, C., Imbert, A., Titz, A. «Non-carbohydrate glycomimetics as inhibitors of calcium (II)-binding lectins.» <i>Angewandte Chemie International Edition</i> 60 (2021). doi.org/10.1002/anie.202013217
Duration of the project	42 months		
Coordinator	Anne Imbert		
Établissement coordinateur	Research Centre of Vegetal Macromolecules (Cermav), CNRS		
Project region	Auvergne-Rhône-Alpes		



CLIMAX

Addressing climate services through a process of knowledge co-production

FAMILY FARMING INTERDISCIPLINARITY CLIMATE SERVICES
COOPERATIVE RESEARCH

Patterns of climate variability connecting the South American monsoon region (including the Amazon) to southeastern South America have an influence on extreme events, and an impact on various sectors of society. More than 200 million people live in this region, which is one of the world's largest agricultural producers. The interdisciplinary and cross-sectoral CLIMAX project aimed to support South American climate services within the framework of research cooperation. By contributing to the creation of the Regional Climate Centre for South America (CRC-SAS), and by mobilising different stakeholders in national meteorological, agricultural, and energy services, the project helped to better understand and predict regional climate variability.

©
The project involved stakeholders in civil society to successfully develop a climate services co-production process for family farming in Argentina, which could be extended to other regions.

Project	Climate Services Through Knowledge Co-Production: A Euro-South American Initiative For Strengthening Societal Adaptation Response to Extreme Events	Partners	<ul style="list-style-type: none"> – America, Africa and Asia Centre for Social Sciences (CESSMA), University of Paris / Inalco / JRD – CNRS – CEA – National Institute for Space Research (INPE), Brazil – IRD – Laboratory of Climate and Environmental Sciences (LSCE), CEA / CNRS / University of Versailles Saint-Quentin – Potsdam Institute for Climate Impact Research (PIK), Germany – Technical University of Munich (TUM), Germany – Wageningen Environmental Research (ALTErrA), The Netherlands – Wageningen University & Research (WUR), The Netherlands
Programme	Belmont Forum JPI Climate		
Edition	2015		
ANR grant	€597,000		
Duration of the project	91 months		
Coordinator	Carolina Vera		
Website	www.climax-sa.org/		
Établissement coordinateur	French-Argentinean Institute of Climate Studies and its Impacts (IFAECl), CNRS / IRD / UBA / CONICET		
Project region	Europe, South America	Main publication	Hernández, V., Fossa Riglos, MF., Vera, C. "Addressing climate services in South American Chaco region through a knowledge coproduction process." <i>Global Environmental Change</i> 72 (2022). doi.org/10.1016/j.gloenvcha.2021.102443



CORTICITY

Comparative investigation of the cortical circuits in mouse, non-human primate, and human

ANATOMY COGNITION MODELLING NEUROSCIENCE
OPTOGENETIC PHYSIOLOGY

The CORTICITY project, involving many international partners, addressed fundamental empirical and theoretical issues relating to the anatomical, physiological, and organisational differences in the cortical circuits of three mammalian species: mice, non-human primates, and humans. Its purpose was to identify the mechanisms by which neuronal interactions imply different states of consciousness. The invasive anatomical and physiological techniques used in mice and macaques helped extract empirical data, as well as to identify the fundamental principles of cortical organisation, which are both essential for the development of brain patterns and large-scale simulations. By comparing whole-brain model simulations with non-invasive investigations in macaques and human subjects, we were able to identify the physiological and structural basis of cognitive architecture in human and non-human primates under various states of consciousness.

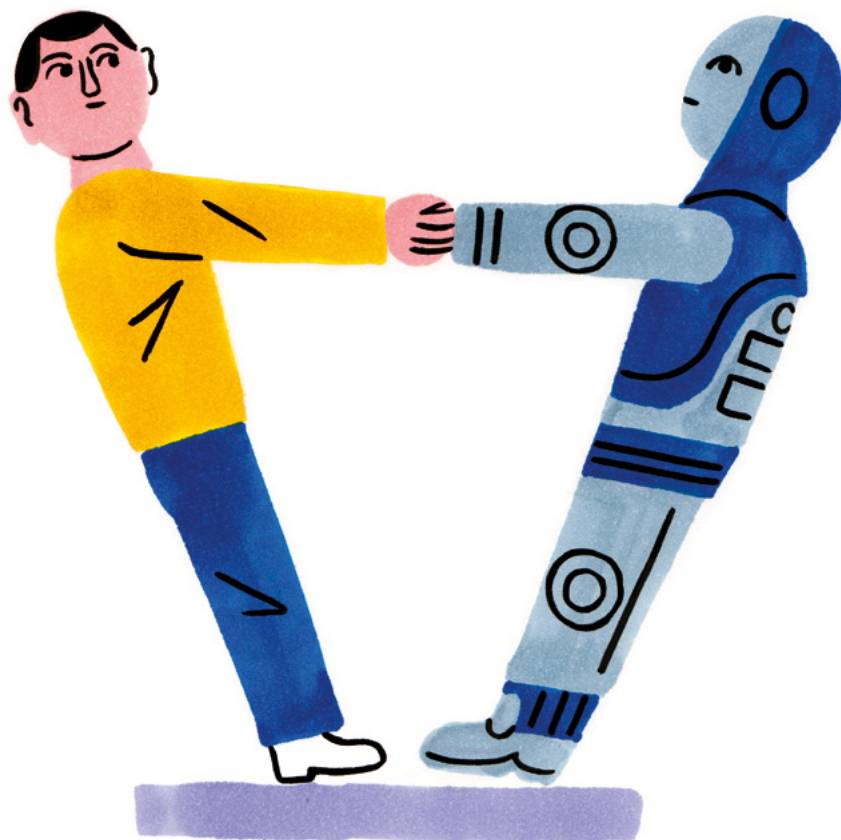
©

The project resulted in two patent applications. The high-quality anatomical and physiological data collected will be incorporated in the European neuroinformatic platform EBRAINS to improve and correct existing simulations and brain models.

Project	Comparative Investigation of the Cortical Circuits in Mouse, NHP and Human	Partners	<ul style="list-style-type: none"> – CEA – Babes-Bolyai University, Physics Department, Romania – Physics-UND Department of Physics, University of Notre Dame, United States – Institute (ESI) for Neuroscience in Cooperation with Max Planck Society, Germany – Pompeu Fabra University - Center for Brain and Cognition, Spain
Programme	PRCI-CE ERA-NET FLAG-ERA		
Edition	2017		
ANR grant	€411,000		
Duration of the project	48 months		
Coordinators	Henry Kennedy and Kenneth Knoblauch	Main publication	Gămănut, R., Kennedy, H., Toroczkai, Z., et al. "The mouse cortical connectome, characterized by an ultra-dense cortical graph, maintains specificity by distinct connectivity profiles." <i>Neuron</i> 97 (2018). doi.org/10.1016/j.neuron.2017.12.037
Website	www.flagera.eu/wp-content/uploads/2019/01/CORTICITY.pdf		
Coordinating institution	Stem-Cell and Brain Research Institute (SBRI), Inserm/University Lyon 1		
Project region	Auvergne-Rhône-Alpes		

LIHLITH

New lifelong learning framework for human-machine interaction



CHATTERBOT LIFELONG LEARNING
ARTIFICIAL INTELLIGENCE REPRODUCIBILITY

Based on this experiment, systems that learn several tasks sequentially become more efficient at solving related tasks. This process, known as lifelong learning, is fundamental to the LIHLITH project focusing on chatbots. A chatbot was designed to receive a reward for each successful interaction. The reward was then used to train the chatbot, reducing development costs in both a specific domain as well as when moving to new domains. The chatbot's improved performance was assessed using open benchmarks, and by comparing it with other chatbots. The project helped develop new benchmarks and assessment protocols.

©
The project generated a substantial number of publications, data sets, protocols, and assessment metrics in open access that will benefit the scientific community. For instance, the LNE and the company Synapse used the project to propose new services and products.

Project	Learning to interact with humans by lifelong Interaction with humans	Coordinating institution	Computer Science Laboratory for Mechanics and Engineering Sciences
Programme	ERA-NET CHIST-ERA	Project region	Île-de-France
Edition	2017	Partners	– ZHAW Zurich University of Applied Sciences, Switzerland – Synapse développement, France – National University of Distance Education, Spain – University of the Basque Country, Spain
ANR grant	€240,350		
Duration of the project	36 months		
Coordinator	Sophie Rosset		
Website	ixa.ehu.eus/lihlith		



IrDIVE

Platform for interdisciplinary research in visual science and culture



The Equipex IrDIVE is a technology space located in the heart of Lille at the Plaine Images site, an innovation cluster dedicated to the creative and cultural industries. Numerous facilities are housed in a 2,000 m² location, including The Open Reality Experience (TORE) virtual reality space, whose screen is curved in all its dimensions and has no edges—an unprecedented technological innovation compared to existing immersive rooms. Bringing together companies and art centres with researchers from the humanities, cognitive science, and digital technology, the Equipex drives ambitious interdisciplinary research and promotes the development of innovative display and interaction devices for studying visual and material cultures on the historical, perceptual, cognitive, and technological level.

©
The Equipex IrDIVE has been perpetuated, and its scientific activities strengthened, through the creation of the Research Federation for Visual Sciences and Cultures (FR CNRS 2052) in 2021, its integration in the CPER ENHANCE project (2021-2028), and its participation in the national Equipex+ Continuum network (2021-2029).

DIGITAL DEVICES VIRTUAL REALITY SIMULATION VISUAL CULTURE
COGNITION INTERACTION

Project	Research innovation in digital and interactive visual environments	Coordinator	Yann Coello
Action PIA	Equipex	Website	www.irdive.fr
Subvention PIA	€3,650,000	Coordinating institution	University of Lille
Duration of the project	September 2012 to June 2021	Project region	Hauts-de-France



Amàco

Education, research, guidance, and expertise to build with what is beneath our feet or within our reach

- CONSTRUCTION AND ARCHITECTURE
- COLLECTIVE INTELLIGENCE
- BIO-GEO-SOURCED MATERIALS
- EXPERIENTIAL EDUCATION

Amàco, an initiative of excellence in innovative training (IDEFI), promotes the use of bio-geo-sourced materials in construction, via multidisciplinary and experimental education. Amàco also provides consultancy and expertise activities: the association assists (future) architecture and construction professionals in designing and conducting projects using locally available natural materials. As a symbol of the ambitions set out in the IDEFI initiative, Amàco has laid the foundations for a new education among the network of architecture and engineering schools, while deploying training actions outside this circle, along with building a sustainable economic model. New educational resources are currently being developed as part of the Resources Hybridization project.

©
Amàco was used to design experiential educational content disseminated to a wide audience. Amàco is now an independent structure, and is pursuing its training, consulting, and applied research activities, as well as diversifying its skills and resources.

Project	Workshop: Building Materials	Project region	Auvergne-Rhône-Alpes
Action PIA	IDEFI	Partners	<ul style="list-style-type: none"> – Grenoble National School of Architecture – National Institute of Applied Sciences of Lyon – School of Industrial Physics and Chemistry of Paris – Les Grands Ateliers, Villefontaine
Duration of the project	August 2012 to December 2021	Generated resources	www.amaco.org/ressources/
Subvention PIA	€5,000,000		
Coordinator	Laetitia Fontaine		
Website	www.amaco.org		
Coordinating institution	Amàco association		



DEMETERRES

Development of eco-technological methods for the rational remediation of effluents and soils



NUCLEAR ACCIDENT DECONTAMINATION ECO-TECHNOLOGIES
AGRICULTURAL REHABILITATION FUKUSHIMA

The DEMETERRES project focused on environmentally responsible methods for cleaning up contaminated agricultural soils following a nuclear accident. It developed two innovative techniques for capturing radioactive caesium, which were tested on the Fukushima site: a technique to decontaminate clay soils using particle flotation foam, patented and in the process of industrialisation in Japan as part of a public-private partnership (CEA, Veolia, Oran, IRSN) supported by Bpifrance and monitored by the ASN (Nuclear Safety Authority); and a technique to remediate soils using plants, tested in a real environment. A caesium selective adsorbent has been patented, developed, and industrialised to decontaminate effluents.

©
Flotation foam and plant bioremediation technologies will be developed in Japan (post-Covid) as part of French-Japanese public-private partnerships.

Project	Development of Bio- and Eco-technologies for effluents and soils rational remediation in support of a post-accident agricultural rehabilitation strategy	Régions du projet	Île-de-France, Occitanie, Provence-Alpes-Côte d'Azur, Auvergne-Rhône-Alpes
Action PIA	Research in Nuclear Safety and Radiological Protection	Partners	– CEA – Orano Cycle – Véolia Environment Research and Innovation – Institute for Radiological Protection and Nuclear Safety (IRSN) – INRAE – French Agricultural Research and International Cooperation Organisation (CIRAD)
Subvention PIA	€5,830,697	Main publication	Chagvardieff, P., Barré, Y., Blin, V., et al. "DEMETERRES project: development of innovative technologies for removing radionuclides from contaminated solid and liquid matrices (2019)" doi.org/10.1051/epjconf/201715305026
Duration of the project	October 2013 to December 2020		
Coordinator	Pierre Chagvardieff		
Website	www.cea.fr/Pages/domaines-recherche/energies/energie-nucleaire/fukushima-10-ans-CEA-a-la-pointe-de-la-recherche.aspx?Type=Chapitre&numero=4		
Coordinating institution	CEA		



LIRYC – The Electrophysiology and Heart Institute

A University–Hospital Institute specialised in heart rhythm disorders



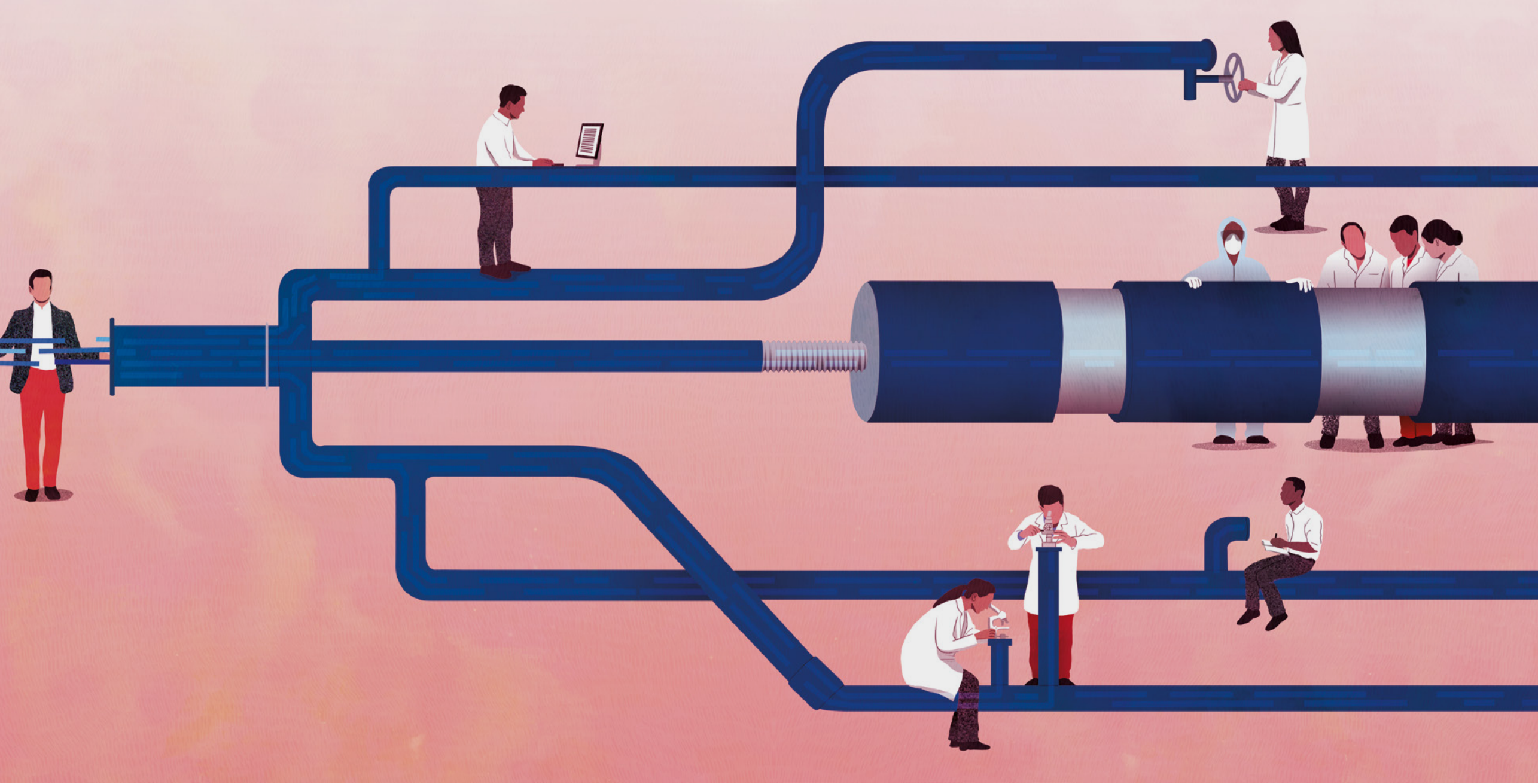
VENTRICULAR ARRHYTHMIA ATRIAL FIBRILLATION HEART FAILURE
HEART MODELLING SUDDEN CARDIAC DEATH HEART RHYTHM DISORDER

LiryC is one of seven University–Hospital Institutes (IHU) created under the Investments for the Future Programmes to boost French medical research and innovation. It aims to provide novel solutions for heart rhythm disorders affecting several million people worldwide. Situated at the crossroads between research, innovation, treatment, and education, the IHU programme emerged from the multidisciplinary observation of patients' needs. Thanks to its international experts and unique technology platforms, LiryC has enabled major advances in the treatment and prevention of heart rhythm disorders. In 2021, progress was made in understanding the mechanisms of ventricular fibrillation for the prevention of sudden death, new imaging technologies were developed to improve the diagnosis of cardiac arrest, and new software was developed to improve the training of cardiologists.



LiryC's ambition is to revolutionise atrial fibrillation ablation treatment with safer, faster, and more effective energies, to identify people at risk of sudden death, to prevent a fatal event, and to develop the digital tools that will enable future research and care.

Project	The Electrophysiology and Heart Modelling Institute	Partners	– Inserm – CNRS
Action PIA	IHUA	Publication principale	Pambrun T, Duchateau J, Delgove A, Denis A, Constantin M, Ramirez FD, Chauvel R, Tixier R, Welte N, Andre C, Nakashima T, Nakatani Y, Kamakura T, Takagi T, Krisai P, Cheniti G, Vlachos K, Bourier F, Takigawa M, Kitamura T, Frontera A, Sacher F, Hocini M, Jais P, Haissaguerre M, Walton RD, Derval N. <i>Epicardial course of the septopulmonary bundle: Anatomical considerations and clinical implications for roof line completion</i> . Heart Rhythm, 2021. PMID 33188900
Duration of the project	June 2011 to December 2024		
Subvention PIA	€61,000,000		
Coordinator	Prof. Pierre Jaïs		
Website	www.ihu-liryC.fr		
Établissement coordinateur	Fondation Bordeaux Université		
Project region	Nouvelle–Aquitaine		
Fondateurs	– University of Bordeaux – University Hospital of Bordeaux – INRIA – Nouvelle–Aquitaine Region		



02

Meeting the needs
of all research

An overview of funding opportunities

ANR has approximately fifteen funding instruments, each with its own target audience and submission, selection, and monitoring conditions. This overview provides an insight into the various funding opportunities available.

DURATION OF THE PROGRAMME	FUNDING AMOUNT	NUMBER OF PROJECTS SELECTED	SELECTION RATE
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- ▾ The Generic Call for Proposals: 5 instruments to support research initiatives

FUNDING INDIVIDUAL RESEARCH PROJECTS

JCJC *Young Researchers Project*

FUNDED AND OPERATED BY ANR

	IN 2021		
24 TO 48 MONTHS	€128 m	479	26.9%

FOR WHOM

Researchers who completed their thesis less than ten years ago, and who are under contract for less than five years in one or more institutions or research organisations.

FOR WHAT

- ▾ Funding individual research projects
- ▾ Helping the younger generation to develop their own research themes through an original approach, and to create or strengthen their team.

FUNDING AMBITIOUS AND INNOVATIVE RESEARCH PROJECTS

PRME *Single-Team Research Project*

FUNDED AND OPERATED BY ANR

CREATED IN AUTUMN 2021 / FIRST PROJECTS FUNDED IN 2022

FOR WHOM

An already established team (or single-team laboratory) belonging to a public institution or research organisation.

FOR WHAT

Strengthening intra-team collaboration and encouraging the mobilisation of skills in the service of disruptive scientific projects.

FUNDING COLLABORATIVE RESEARCH PROJECTS

PRC *National Collaborative Research Project*

FUNDED AND OPERATED BY ANR

	IN 2021		
24 TO 48 MONTHS	€506.7 m	1 008	22.9%

FOR WHOM

A consortium consisting of at least two public research organisations

FOR WHAT

Strengthening collaboration cultures and practices within and between institutions or research organisations.

PRCI *International Collaborative Research Project*

FUNDED AND OPERATED BY ANR

	IN 2021		
24 TO 48 MONTHS	€39.6 m	133	14.8%

FOR WHOM

Public research laboratories looking to collaborate with one or more foreign partners, and also seeking funding from a foreign agency within the framework of a bilateral agreement with ANR.

FOR WHAT

Strengthening French research at the international level by ensuring a balance between the financial and scientific contributions of each country's partners, within the framework of a bilateral agreement: jointly determined objectives, skills sharing, tasks, results, and intellectual property.

PRCE *Collaborative Research Project Involving Enterprise*

FUNDED AND OPERATED BY ANR

	IN 2021		
24 TO 48 MONTHS	€91.5 m	159	20.6%

FOR WHOM

A consortium consisting of at least one public research laboratory and an enterprise conducting research efforts and development in France.

FOR WHAT

Promoting effective collaborations between academic and economic partners: jointly determined objectives, tasks, risks, results, and intellectual property sharing.

Specific calls for proposals

Flash

FUNDED BY ANR AND CO-FUNDERS, OPERATED BY ANR

 18 TO 30 MONTHS	SINCE 2010	
	11 FLASH CALLS FOR PROPOSALS	 €31.5 m

FOR WHOM

Teams consisting of researchers from public organisations, in partnership with private businesses or members of civil society.

FOR WHAT

Meeting an urgent and specific research need, due to an exceptional event or disaster.

Challenge

FUNDED BY ANR AND CO-FUNDERS, OPERATED BY ANR

 30 TO 60 MONTHS	SINCE 2008	
	9 CHALLENGES	 €25.5 m

FOR WHOM

A consortium consisting of at least one research laboratory and enterprise, and even members of civil society.




FOR WHAT

To encourage emulation by mobilising several consortia of researchers simultaneously, with the aim of removing a specific scientific, technological, or methodological barrier.

Economic impact of research and competitiveness: specific programmes supplementing the PRCE funding instrument to encourage public-private partnerships

LabCom Joint laboratories

FUNDED BY ANR AND CO-FUNDERS, OPERATED BY ANR

 54 MONTHS	IN 2021		
	 €8.6 m	21 LABCOMS	 28.8%
	SINCE 2013		
	205 LABCOMS SELECTED	€65.2 m	

FOR WHOM

An academic research stakeholder and a private enterprise, particularly an SME or Mid-Market.

FOR WHAT

To encourage sustainable public-private partnerships in an effort to increase scientific production and support innovation that creates economic value.

Carnot Programme

FUNDED AND OPERATED BY ANR

 48 MONTHS	39 ONGOING CARNOT INSTITUTE PROGRAMMES	 €82 m
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FOR WHOM




A research laboratory or group of academic structures committed to engaging in partnerships with private enterprises of all sizes central to its strategy.

FOR WHAT

- To develop contractual research between public research structures and the business world
- To promote technology transfer and meet the needs of enterprises by concentrating highly specific resources and skills.

Industrial chairs

FUNDED BY ANR AND CO-FUNDERS, OPERATED BY ANR

 48 MONTHS	IN 2021		
	 €4.3 m	7 INDUSTRIAL CHAIRS	 53.8%
	SINCE 2012		
	47 CHAIRS FUNDED	€39.5 m	

FOR WHOM




A public research institution or organisation and at least one partner enterprise committing to equally co-fund the chair with ANR

FOR WHAT

- To allow internationally recognized French or foreign research professors or researchers, who are potentially in mobility, to work on an ambitious, innovative research project of major industrial importance.
- To build and structure collaborative scientific research actions in priority and strategic areas for public and private stakeholders involved in the industrial chair, through a strong and lasting partnership.
- To train young researchers involved in strategic industrial research projects, and help them adapt to the methods and challenges of the business world.

ASTRID and ASTRID Maturation Specific support for research and innovation for defence

FUNDED BY THE AID, OPERATED BY ANR

 18 TO 36 MONTHS	IN 2021		
	 €11.9 m	33	 26.4% AND 58.8%

FOR WHOM

A consortium pursuing research and development in France. ASTRID calls for proposals must include a public research entity that can be associated with various potential partners (OR, VSB, SME, Mid-Market, Large enterprises, etc.). Within the framework of ASTRID Maturation, the consortium consists of a public research entity and an enterprise, with the rest of the consortium being free.

FOR WHAT

- To support dual-use research projects (civilian and military application) that can predict technological developments in defence and security systems, whose benefits extend to the civilian sector (ASTRID).
- To bring ASTRID projects—and other projects from the Ministry of Armed Forces—to a new advanced maturity level (approval in a representative environment), and to exploit the results with investors and industrial actors (ASTRID Maturation).

- Building the European Research Area (ERA) and international attractiveness – Specific programmes supplementing the PRCI funding instrument

STRENGTHENING THE INVOLVEMENT OF FRENCH TEAMS IN EUROPEAN CALLS

MRSEI
Setting up European or International Scientific Networks

FUNDED AND OPERATED BY ANR

🕒 24 MONTHS	IN 2021		
	€1.69 M	61	50.83%

FOR WHOM

A team within a public institution or research organisation seeking to build a network of partners to access European (Horizon Europe 2021-2027) or international calls for proposals.

FOR WHAT

To provide the means for researchers to set up and manage major projects internationally.

T-ERC
Tremplin European Research Council

FUNDED AND OPERATED BY ANR

🕒 24 MONTHS	€1.3 m
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FOR WHOM

Researchers who did not receive funding from the Starting Grant (StG) or Consolidator Grant (CoG) ERC call for proposals, despite the quality of their project (graded A during the second stage).

FOR WHAT

To enable researchers to improve their proposals and increase their chances of success in a second submission to the ERC, and to strengthen the visibility of French research at European level.

Access-ERC
Access European Research Council

FUNDED AND OPERATED BY ANR

🕒 24 MONTHS	NEW 2022 PILOT CALL: SSH PRIORITY
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FOR WHOM

Researchers in the social sciences and humanities, affiliated with a research laboratory, having completed a PhD less than three years ago, and wishing to submit a project to the ERC.

FOR WHAT

To facilitate access to ERC funding for SSH researchers, and to increase the visibility of French research at European level.

Multilateral cooperation

Within the European framework of a Joint Programming Initiative (JPI), a programme supported by the European Commission (ERA-NET, EJP, Partnership, etc.), or a multilateral agreement between foreign funding agencies and ANR (Belmont Forum, ORA, CRCNS/NEUC, etc.).

32 [1] CALLS FOR PROPOSALS	IN 2021		
	180 PROJECTS FUNDED	€48.4 m ALLOCATED BY ANR	32.2% [2]

FOR WHOM

French teams and their foreign partners, in response to a call bringing together funding agencies from at least three different countries.

FOR WHAT

To encourage collaborations between teams from different countries, to share skills and resources, to respond to scientific challenges of mutual interest, and to increase French research excellence.



Launched on 7 October 2021, the “appelsprojetsrecherche.fr” website combines all the calls for proposals conducted by ADEME, Inserm, ARNS-MIE, Anses, INCa and ANR. The initiative is a concrete expression of the commitments made by Frédérique Vidal, Minister of Higher Education, Research and Innovation, to simplify access to research funding.

By centralising all information regarding available calls—whether calls for proposals or applications—this single portal facilitates monitoring efforts conducted by researchers, laboratories, and research institutions. It helps them quickly find the offers that best match their themes, and to receive an alert when new calls are published.

The portal, managed by ANR, will gradually be improved with new features and joined by new partners, with a view to even further simplifying the procedures for project coordinators and beneficiaries.

[1] EuroHPC calls included.

[2] On detailed proposals
Selection rate in stage 2 of two-stage calls: 38%.
Overall selection rate in two-stage calls: 17%.
Overall selection rate in single-stage calls: 33%

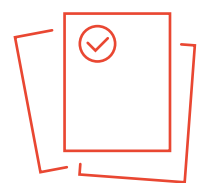
ANR tackles Covid-19

Faced with the health emergency in 2020, ANR mobilised in an exceptional manner by launching the Flash Covid-19 and the Research-Action Covid-19 calls for proposals. This action, designed to encourage research for innovative solutions adapted to the development of the pandemic, continued in 2021 through the launch of specific calls: Covid-19 Resilience and Action-Lebanon, both nationally and internationally. The Covid-19 priority set out in the 2021 Generic Call for Proposals is also part of ANR's action over the longer time frame of basic research.

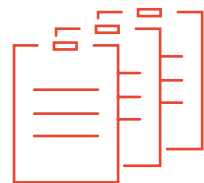


PHOTO: DAVYN BEN / UNSPLASH

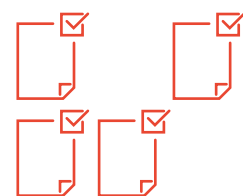
Covid-19 Resilience Call



147
eligible projects



45
projects funded



30.6%
selection rate



3.4 m€
allocated

» ZOOM

EVALCOVID-19: what connections are there between the mobility of people and the spread of the virus?

ANR funded the EVALCOVID-19 project as part of the Flash Covid-19 call. Using mobile phone data, this study estimated a 65% reduction in travel, particularly short-distance travel (rush-hour commuting) during lockdown. Even greater reductions were observed in severely affected areas, suggesting greater acceptance of restrictions when the notion of risk was stronger. An analysis of factors influencing travel at the departmental level was also carried out, and concluded that the structure of the local labour market is the strongest constraint on travel reduction.

These results were used in a mathematical model to assess the impact of lockdown on the progression of the epidemic in Île-de-France. They demonstrated that the lockdown helped slow the spread of the epidemic, and were subsequently submitted to authorities in April 2020. New analyses conducted during the successive lockdowns were listed in the Scientific Advisory Board's report of 12 November 2020.



Watch the Datagora video for a quick overview of ANR's Covid-19 actions:
www.youtube.com/watch?v=A8hWg1dk2R8

↘ A short-, medium- and long-term action

In 2021, in keeping with its initial emergency actions, ANR focused on supporting the quick production of data on the continuation of the pandemic, including the emergence of variants and continuing symptoms several months after infection (long Covid). The Covid-19 Resilience call supported 45 projects, with an emphasis on multidisciplinary approaches. Action-Lebanon, an international cooperation initiative, funded 13 projects over 18 months. As a complement, the Covid-19 priority that is part of the 2021 AAPG is supporting 25 projects over a period of three to four years, with a view to expanding our knowledge of the disease and virus for less immediate application.



A word from... **Philippe Bouvet**

Head of the Biology and Health Department, ANR

"In the future, ANR will no longer launch specific calls for proposals focusing on Covid-19, as the newly created ANRS-Emerging Infectious Diseases (ANRS-MIE) is now entrusted with this task. But we will continue funding medium- and long-term basic research projects on these themes, once again through our AAPG. The Covid-19 priority launched in 2021 was renewed in 2022. Even in the absence of priority, we will still support these themes as we have always done in the past, based on the scientific quality of the projects. One of the roles played by ANR is to support the study of basic mechanisms, and the development of innovative technologies that enhance our knowledge of new diseases, thereby allowing us to combat their emergence."



↘ ZOOM

The Action-Lebanon call: emergency support for the Lebanese research ecosystem

The financial crisis and the catastrophic explosion of the Port of Beirut have had a negative impact on the Lebanese scientific research ecosystem. Favouring a global support approach, ANR, AFD and the Lebanese National Council for Scientific Research (CNRS-L) launched the Action-Lebanon call for proposals on 31 March 2021 to support research projects relating to the Covid-19 pandemic and the multidimensional crises currently affecting Lebanon.

The success of the call was demonstrated by the 73 scientific projects submitted, 42 of which were considered suitable, and 13 of which were finally selected, receiving financial support of €65k to €95k each for a period of 18 months.

Public-private partnership-based research

One of ANR's basic missions is to promote technical innovation and to support technology transfer from academic research to French enterprises. To achieve this objective, the agency relies on several funding instruments designed to develop public-private partnerships: Carnot Institutes, LabComs, Industrial Chairs, as well as ASTRID and ASTRID Maturation programmes.



↳ An incredibly positive review for the 15th anniversary of the Carnot label

The Carnot label, awarded by the French Ministry of Research, recognizes public structures conducting research in collaboration with socio-economic stakeholders. Cap'CARNOT, an annual meeting of all Carnot Institutes, was held on Tuesday, 28 September 2021, and provided an opportunity to celebrate the programme's 15th anniversary through a collection of testimonies from company directors and programme coordinators. Also on display were twenty-four product and service demonstrators that grew out of research conducted within the institutes, in various fields such as health, sports, transport, agriculture, environment, energy, and manufacturing. Major stakeholders in French innovation, the 39 Carnot Institutes are expected to generate revenues of €530 million in 2021.

€942,889,895
of ANR funding



35,800
Researchers
involved

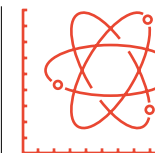


13,538
patents
pending

1,622
enterprises
created

↳ 21 new LabComs...

Joint laboratories enable academic structures and enterprises such as SMEs or Mid-Markets to combine their research capacities via a jointly established roadmap, integrated team operation, a common strategy for technology transfer, and the sharing of intellectual property. Since 2013, the LabCom programme has helped select 205 joint structures across all disciplinary fields, including 21 in 2021.



TESMARAC: resins for radioisotope measurements

The purpose of the TESMARAC LabCom is to develop new mediums to separate and analyse DTM (difficult

to measure) radioisotopes at the trace level in complex environments: a challenge for stakeholders in the radiological protection and nuclear sectors (medicine, environment, nuclear power cycle, etc.), as well as public safety authorities. This highly mature research was conducted by sharing the skills and expertise of the Subatech laboratory^[1], specialising in radiochemistry and nuclear metrology, and TrisKem International, specialising in the development and production of highly selective resins. "This is a fine example of the innovative spirit of the Grand-Ouest" said Michaela Langer, President of TrisKem International.



SaphirLab: Innovation and development of high-performance sapphires

Improving the productivity of high-quality synthetic sapphires for future

cutting-edge technologies (lasers, gravitational wave detection, watchmaking, etc.) is the objective of the joint SaphirLab, which brings together RSA Le Rubis and the Institute for Light and Matter (iLM)^[2]. With the support of ANR, this LabCom pursues innovation at every stage of crystal growth and sapphire characterisation, in order to foster the development and reliability of high-performance sapphire crystallisation using techniques not derived from the Verneuil method.

[1] CNRS / University of Nantes / IMT Atlantique

[2] UMR5306 / UCBL / CNRS / University Claude Bernard Lyon 1

... and seven new Industrial Chairs

Led by internationally renowned research professors, Industrial Chairs structure research efforts over a four-year period, in collaboration with French enterprises in strategic sectors. Funded equally by ANR and the enterprises involved, Industrial Chairs provide innovative solutions to industrial problems while training young researchers. Seven new chairs were established in 2021.



CORENSTOCK:

Reinventing the hot water tank

Hot water heating and storage account for most household energy consumption. By creating the CORENSTOCK Chair, two Carnot

institutes—Télécom & Société numérique Carnot Institute, and M.I.N.E.S of the Institut Mines-Télécom (MIT)—and elm.leblanc aim to reinvent the hot water tank. At a time of energy and digital transitions, the potential for innovation is indeed significant. The ultimate objective is to create, within four years, a demonstrator that is more energy efficient, less intensive in raw materials, recyclable, self-adapting depending on user needs, and subject to continuous monitoring in order to extend its life cycle.

Budget	€1.2 m
Funding	50% ANR, 50% ELM.LEBLANC
Education	5 DOCTORAL STUDENTS, 4 POST-DOCS, 3 ENGINEERS.



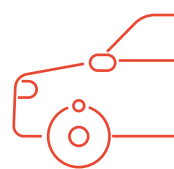
ProtéinoPeps:

New properties for milk proteins

Milk proteins play an important role in food worldwide. How can we control their processing and give them new properties? To

answer these questions, Ingredia, the dairy industry expert, and two academic partners from INRAE—the Materials and Transformation Unit^[1], and the BioEcoAgro Joint Cross-Border Research Unit^[2]—founded the ProtéinoPeps Chair. The two laboratories plan to build on their previous R&D efforts, while Ingredia wants to establish its position on bioactive and hyperprotein markets.

Budget	€1.33 m
Funding	50% ANR, 50% INGREDIA
Education	3 CIFRE DOCTORAL STUDENTS, 1 ENGINEER, 2 POST-DOCS, 8 MASTERS.



MESSIAH: optimising hydrogen transport for a carbon-free world

Hydrogen reduces the mechanical properties of materials with which it is in

contact, complicating its storage and transport. Until these issues are solved, it will not be able to play a role as a decarbonised fuel. Led by the Mines ParisTech Centre of Materials, MESSIAH involves five leading industrial partners: Mannesmann Precision Tubes France SAS, EDF R&D, GRTgaz, Air Liquide, and Transvalor. The chair will help optimise facility design by expanding our knowledge of how materials behave over exceptionally long time periods in H2 environments.

Budget	€1.8 m
Funding	50% ANR, 50% INDUSTRIAL PARTNERS
Education	4 DOCTORAL STUDENTS (INCLUDING 3 CIFRE), 1 POST-DOC, 8 MASTERS SPECIALLYING IN MATERIAL AND STRUCTURAL DESIGN (DMS)

[1] CNRS / Université de Lille

[2] INRAE / Université de Liège / Université de Lille / Université de Picardie Jules-Verne



PHOTO: DIEGO FERNANDEZ / UNSPLASH

ZOOM

MARINER-DECM: exemplary convergence between dual-purpose research and public-private partnership

The ASTRID and ASTRID Maturation programmes, both operated by ANR on behalf of the Defence Innovation Agency, support dual-purpose research projects with both military and civilian repercussions. By doing so, they actively encourage interactions between academic research and the business world, which serve as essential levers of innovation. The MARINER-DECM project, which was selected during the 2017 edition of the ASTRID Maturation programme, ended in June 2021. The consortium included four partners: LEMTA^[1] (Theoretical and Applied Energetics and Mechanics Laboratory), DGA Tn (Directorate General of Technical Naval Armaments), l'IUSTI (University Institute of Industrial Thermal Systems), and RS2N (Scientific Research and Numerical Simulation). These efforts, conducted over a period of 42 months, focused more specifically on characterising materials and flame types (mono- and multi-fuel), modelling flame duration and transmission (envelope and

openings in the facades of civilian buildings and ventilation), and modelling the evacuation of crowds inside these buildings (securing people). The models were then applied within a naval (corvette) and civilian (4-storey office building) environment.

The follow-ups to the project, which have already begun, show the quality of the results. LEMTA and RS2N are now pursuing their collaboration as part of the H2020 LASH FIRE international project aiming to reduce fire hazards on board ro-ro container ships. The network model developed by IUSTI could also be applied to container ships as part of a partnership with CMA-CGM and ENSEM. The MARINER-DECM project also led to the creation, by the University of Aix-Marseille, of a "fire" technology platform open to the international scientific community and industrial actors.

[1] CNRS / University of Lorraine

European and International scientific collaborations

One of ANR's missions is to strengthen scientific cooperation in Europe and worldwide. For the Agency, this means supporting French teams in their collaborations with foreign teams, providing coordinated responses to global challenges, and sharing knowledge, resources, and technologies with strategic partners, chief among them those from the European Union. ANR deploys several instruments to this end: the PRCI (AAPG), specific bilateral and multilateral calls for proposals—often within the framework of European public partnerships such as ERA-NET, JPI, Partnerships, etc.—MRSEI, and T-ERC.

➤ ZOOM Promoting the emergence of transnational scientific partnerships

ANR is committed to strengthening scientific cooperation worldwide by combining its programming with European and international initiatives, and by following the guidelines of the international scientific strategy defined by its supervisory authority. ANR thus supports international consortia in partnership with other European and international funding organisations, as part of bilateral or multilateral programmes.

Its action is also part of implementing the National action plan to improve French participation in European Research and innovation funding schemes (PAPFE).

➤ A privileged French–German partnership

Artificial intelligence research is a French and German priority. The desire to create a common ecosystem in this field was formalised in a declaration of intent signed by Ministers Frédérique Vidal and Anja Karliczek. To implement this policy, the French Ministry of Higher Education, Research and Innovation and the German Federal Ministry of Education and Research (BMBF) respectively commissioned ANR and DLR Projektträger (project management agency) to launch a particularly ambitious bilateral call.

In May 2021, following the selection process, 21 projects were chosen from among the 145 eligible proposals submitted. The overall aid granted is €12 million. The teams selected will explore the following themes over 3 and 4 years: AI serving health, robotics, conversational assistance, online conversation analysis, video content prediction, automated driving, cryptography.

In addition, over the last 15 years ANR and the Deutsche Forschungsgemeinschaft (DFG) have launched a call for projects jointly proposed by French and German research teams in all social sciences and humanities disciplines. For the 2021 edition, 14 projects were selected in September 2021, with average ANR funding of €267 k per project over 36 months.

➤ ANR supports soil and groundwater research within the Belmont Forum

The Towards Sustainability of Soils and Groundwater for Society call for proposals, initiated by the Belmont Forum, seeks to improve knowledge and propose solutions for rehabilitating or maintaining soil and groundwater systems in a Critical Zone (a thin area of the Earth where water, rocks, soil, living organisms and societies interact at various time scales). Within this framework, 6 transdisciplinary research projects have been funded—5 involving French partners—and will be carried out across all five continents over the next three years. These projects were officially launched during the 2021

Sustainability Research & Innovation Congress (SRI2021), held online and in Brisbane, Australia, from 12–15 June 2021.

Created in 2009, the Belmont Forum promotes transdisciplinary (including stakeholders) and international scientific research, generating knowledge to understand, mitigate, and adapt to global environmental change. It brings together several research funding organisations, including ANR for France, international scientific councils, and regional consortia. The calls for proposals launched by the Belmont Forum, known as Collaborative Research Actions (CRA), must be supported and funded by at least three member organisations from three different countries.

➤ Sargassum call for proposals: cooperating to tackle a global issue

In response to the massive arrivals of brown algae affecting Caribbean islands—as well as American coasts from the United States to Brazil, and African coasts from Sierra Leone to Ghana—ANR launched a second call for joint research proposals on 30 November 2021 to expand our knowledge on this phenomenon. This call, organised with CONACYT (Mexico), FACEPE (Brazil), and NWO (Netherlands), seeks to better predict the years when conditions for floating sargassum rafts are high. More particularly, it focuses on three themes: the construction of a dataset to drive hydrodynamic models; the development of a biological model; and the development of an integrative model coupling hydrodynamics and biology.

ANR strengthens ties between France and Africa in higher education and research

During the New Africa-France Summit, held on 8 October 2021 in Montpellier in the presence of the President of the French Republic, Thierry Damerval took part in a round-table entitled Taking Action and Building the Future Together (Higher Education, Research and Innovation Session). He highlighted ANR's efforts to strengthen partnerships between the African and French academic communities: over 300 projects focusing on research issues relating to the African continent have been supported by the agency in the last 15 years. Here is an update on three current actions.



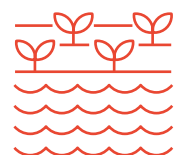
PEA
Funded by AFD (French Development Agency) and managed by ANR with Campus France, the first edition of Partnerships with African

Higher Education was launched in spring 2020. Open to 18 African countries, it attracted around 50 applications, and involved over a hundred African and French higher education institutions. Submitted on 1 July 2021, the winning projects belong to priority training programmes for the sustainable development of their country. They will be supported for four years in the amount of €1.5 to 3.5 million each.



LEAP-RE
Within the framework of the Europe-Africa LEAP-RE programme, co-funded by the European Commission, 16 R&D funding organisations from

13 countries launched a call for proposals on 15 March 2021, coordinated by ANR and MESRS (Algeria). The purpose of LEAP-RE (Long-term Europe Africa Partnership on Renewable Energy) is to develop a long-term partnership between the African Union and Europe focusing on renewable energy research and innovation. The call highlights six research themes, ranging from the development of independent solar systems to reducing the environmental impact of renewable energy components and designing innovative solutions for domestic cooking and refrigeration.



PRIMA
The objective of PRIMA (Partnership for Research and Innovation in the Mediterranean Area) is to address Mediterranean challenges

related to water management, agricultural systems, and agri-food sectors. France is involved in this initiative, along with countries from North Africa, the Near East, and the Northern Shore of the Mediterranean. In 2021, ANR funded 23 projects coordinated by French teams within the framework of this partnership, for a total of €5.9 million.

34 international calls for proposals



€10.0 m
Bilateral

€4.5 m
Multilateral, excluding Europe

€43.5 m
Multilateral in a European framework

€18.8 m
Partnerships with African Higher Education call on behalf of the AFD

Actions for the PAPFE

(NATIONAL ACTION PLAN TO IMPROVE FRENCH PARTICIPATION IN EUROPEAN PROJECTS):



Tremplin-ERC
€1.3 m

MRSEI
€1.3 m

First actions taken as part of France 2030 Investment Plan



As the operator of the France 2030 Investment Plan for actions in higher education and research, ANR not only implements calls for proposals, but also monitors, controls, evaluates, and studies the impact of funded projects. Here is an update on two outstanding 2021 calls.

↳ DemoES: 17 school and university projects selected

The purpose of the DemoES (Digital demonstrators in higher education) call for expressions of interest is to concretely test, in institutions representative of the diversity of French higher education, all aspects of digital transformation, and to evaluate its impact on both institutional strategy and the well-being of students and teachers.

Demonstrators to speed up the digital transition
This call, which opened in March 2021 and closed in May 2021, resulted in 42 expressions of interest. With a budget of €100 million, 17 projects led by institutions or a network of institutions were identified as demonstrators ready to implement and deploy a digital transformation strategy in their training courses, including those in which schoolteachers are trained. The effort involved 400,000 students from institutions in mainland France and overseas territories, as well as models to accelerate a global digital transformation for less developed institutions. The French government and other institutions can use these demonstrators to incorporate feedback from institutions and to draw inspiration from their practices, in an effort to spread the digital transformation of higher education on a national scale. After the Prime Minister announced the results of this call on 8 October 2021, ANR pre-contracted all of the projects, releasing the first disbursements to the various institutions in November.

↳ Exploratory PEPRs: 4 programmes funded as part of the first wave of the call for programmes

The Priority Research Programme and Equipment (PEPR) action set out in the France 2030 Plan—in keeping with the Structuring Equipment for Research and Priority Research Programmes actions of PIA 3—aims to build or strengthen French leadership at the national or European level in priority scientific fields relating to a large-scale transformation, whether it be technological, economic, societal, sanitary, environmental, etc.

Strong support for exploratory research

The French state may decide, during the first stages of this transformation, to guide and support upstream research in exploratory fields. This is the purpose of the call for exploratory PEPR programmes. Depending on the results and the concrete progress of the transformation, other actions may complement the strategy. The plan is to launch around twenty exploratory PEPRs. The average support allocated to each one as part of France 2030 will be approximately €50 million (between €20 and €120 million). The amount will depend on the sector and the possible impact of the PEPR results.

First wave: 19 submissions for 4 selections

Within this framework, the first wave of the call for exploratory programmes was launched in May 2021. The purpose of this call was to identify and select exploratory PEPRs likely to develop national strategies, in which they would be included at a later stage; to choose the scientific co-coordinators that proposed them; and to approve the programme's governance and scientific framework document. With 19 applications submitted as of 30 July 2021, this first wave helped gauge the dynamism and innovative spirit of French research. Four programmes were selected by the French government, following an opinion by an international jury.

The 4 programmes selected:

- 1. DIADEME**
Integrated initiatives to accelerate the deployment of emerging materials
Pilot institutions: CEA, CNRS
- 2. FairCarboN**
Carbon in continental ecosystems: levers and pathways for carbon neutrality
Pilot institutions: CNRS, INRAE
- 3. MoleculArXiv**
Storing massive data on DNA and artificial polymers
Pilot institutions: CNRS
- 4. OneWater**
Water as a Common Good
Pilot institutions: BRGM, CNRS, INRAE



03

Promoting
Science for the
common good

2021 in review

28-29 JANUARY

Symposium on Sustainable Bioeconomy

What scientific breakthroughs have been made in bioeconomy? ADEME and ANR hosted two days to review operational prospects and needs for research and development in this field. This symposium, bringing together nearly 250 experts, was a great opportunity to present the research results from the projects funded by both agencies, as well as to provide input for future calls for proposals.



Watch videos of all interventions, presentations, and round-tables from the symposium: bioeconomie.ademe.fr/replay.htm



25-26 FEBRUARY

2nd International Conference on Personalised Medicine

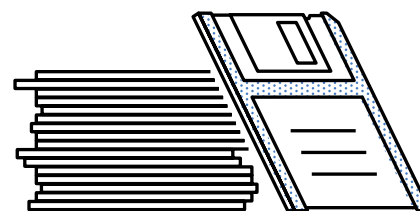
Personalised medicine, which focuses on the characteristics of individuals (genomic data, lifestyle information, etc.), aims to improve the effectiveness of diagnoses, treatments, and preventive measures for the benefit of patients and citizens. What are the challenges and existing solutions to ensure its completion? This crucial issue, particularly with regard to the Covid-19 pandemic, was the focal point of this online conference hosted at the initiative of the ICPeMed consortium, bringing together more than 40 European and international partners, including ANR.



11-12 MARCH

Conference on Digital Technology and Heritage: Challenges and Issues

Despite improvements to digital technologies in recent years, heritage science today faces major technical, methodological, and ethical challenges. ANR and the JPI on Cultural Heritage, with support from the Directorate-General for Heritage of the Ministry of Culture, organised a conference with stakeholders to discuss these issues. The event was an opportunity to present research efforts funded through the Digital Heritage transnational call, as well as the AAPG.



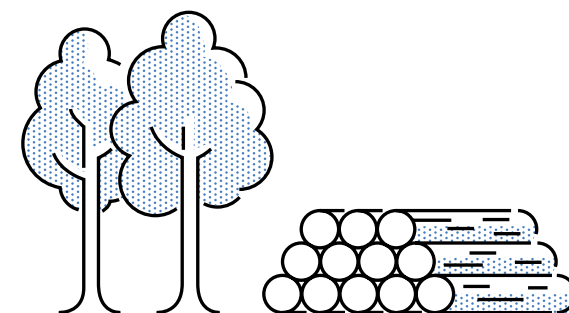
20 MAY

Scientific Meeting on Plastic Microbeads and Nanomaterials»

The use of plastic materials and nanomaterials in various everyday products releases large quantities of micro- and nanoparticles into the environment. What do we know about their effects on health and the environment? The event was driven by a presentation of OPECST's research entitled Plastic Pollution: A Time Bomb, and a round-table on Micro/Mano: Between Futility and Usefulness. This day-long event, which brought together almost 500 participants, was an opportunity to present the results of research projects funded by ANSES and ANR on this emerging issue.



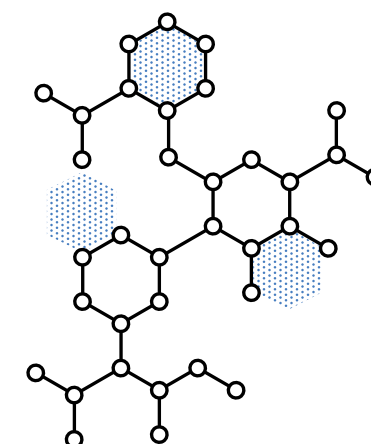
Watch the scientific meeting between Anses & ANR: www.youtube.com/watch?v=dm95JZnLRb8



30-31 MARCH

Symposium on Trees, Forests, Woods and Societies

ANR supports diverse forest research projects at the intersection of environmental, social, and economic issues, doing so at various levels of technology maturity, and involving multidisciplinary teams (biology, ecology, SSH, chemistry, etc.). Following the publication of a thematic brochure analysing the 131 projects funded by ANR between 2010 and 2018, the Agency and the Gironde department organised a dedicated symposium to review progress and research prospects in this sector.



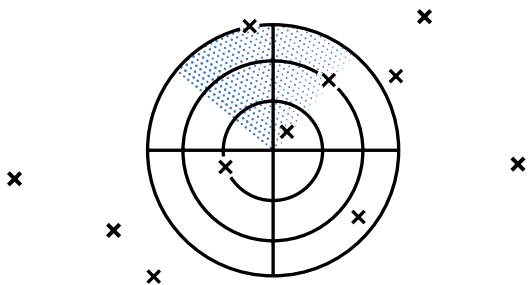
6 JULY

Challenge MALIN closing symposium

How can we geolocate civilian or military response officers in the absence of a GPS signal? To meet this challenge, ANR and the DGA launched the Challenge MALIN (MAîtrise de la Localisation INdoor), mobilising six research teams for 42 months, each developing a prototype based on different approaches. The test results were presented at a closing conference where Thierry Damerval, President and CEO of ANR, and Patrick Aufort, Deputy Director of the AID, recognized the Cyborgloc, Smart-Iloc, and TMI-RED teams, and emphasised the quality of research conducted by the six teams on indoor localisation.



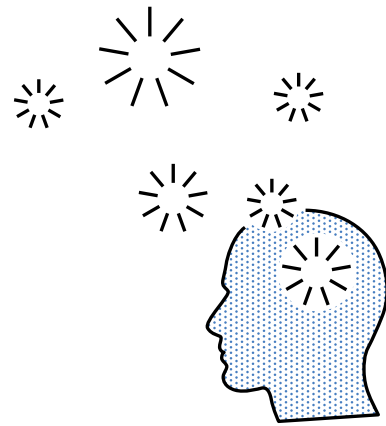
Find out more on the systems developed by the winners of the challenge:
www.youtube.com/watch?v=fikBmom7dq4



1-11 OCTOBER

Fête de la Science: Eureka! The Emotion of Discovery

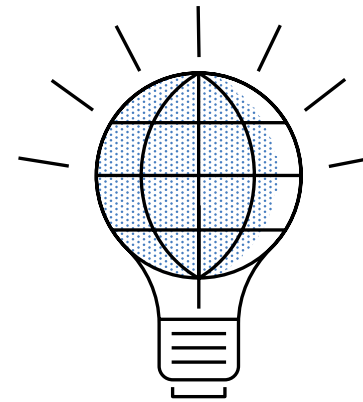
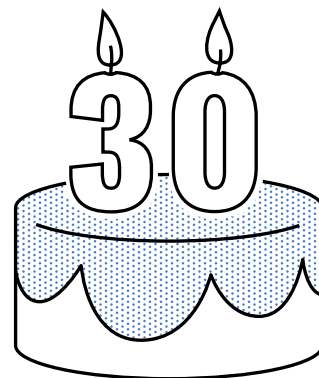
For over 30 years, the Fête de la Science Festival, hosted by the French Ministry of Research, has been a major event for science enthusiasts, with the goal of bringing science and society closer together in order to develop a vital bond of trust—whose importance was clear during the health crisis. This anniversary edition includes events across the country, as well as a daily Science Live event with the Esprit Sorcier team. ANR, a partner alongside other research institutions and organisations, used this opportunity to present the BLOC-PRINT, Symbiofire, EndObesity, and MODAPA projects.



8-9 JULY

8th Edition of the Research and Creation Meetings

Since 2014, ANR and the Festival d'Avignon have hosted the Research and Creation Meetings, a special moment for sharing with the public, with a view to connecting the festival's work with the most recent research. For this 8th edition, entitled Memory of the Future, the artists scheduled at the festival and researchers from different disciplines were invited to reflect on the way societies invent and transform themselves.



19 OCTOBER

2nd Edition of the Research Creates Innovation Meetings

Hosted by ANR, this day-long event on the theme of Innovation for Society put the current challenges of the transition from techno-centric innovation to innovation for society into perspective, in an effort to respond to societal issues such as the crisis caused by the Covid-19 pandemic and climate change. Highlights include the opening panel discussion entitled What Lessons Can We Learn from a Global Socio-economic Crisis for Innovation?, which was attended by Thierry Damerval, the President and CEO of ANR, Paul-François Fournier, the Executive Director of the Innovation Department at Bpifrance, Géraldine Leveau, the SGPI Deputy Secretary General, Jean-David Malo, the Director of the European Innovation Council, and Claire Giry, MESRI's Director-General of Research and Innovation. This event included a series of Moments of Innovation videos highlighting 12 partnership research projects funded by ANR.

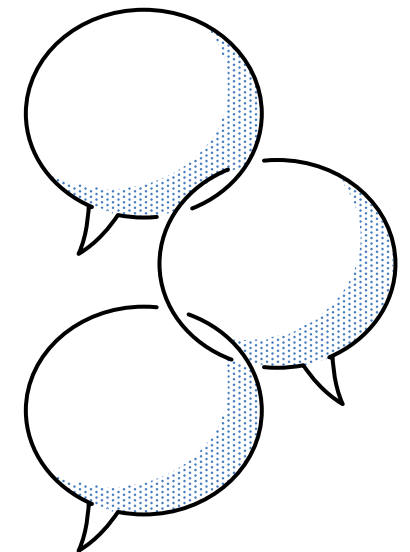


Watch the event again on ANR's YouTube channel:
www.youtube.com/watch?v=K5Jrip70V6Y

19-21 NOVEMBER

Rencontres Capitales, at the Institut de France

To elucidate the deep changes in our society and better prepare for the future, thirty debates were organised in collaboration with ANR at the Institut de France in Paris, bringing together academics, public figures, philosophers, and scientific, economic, and cultural stakeholders. These meetings included Thierry Damerval, President and CEO of ANR, who took part in the first roundtable on Science, Health, Economics, Politics: What Lessons can be Learned from the Covid Period?



Watch the event again:
www.youtube.com/watch?v=tgoESdEM-iA

ANR conducts Science with and for Society

Strengthening the interaction between science, research, and society is one of the priority objectives of the Research Programming Law 2021-2030. ANR, which has always encouraged the scientists it funds to transfer knowledge to citizens and decision-makers, launched a call for expressions of interest (AMI) in February 2021 to identify the needs and expectations of scientific communities.

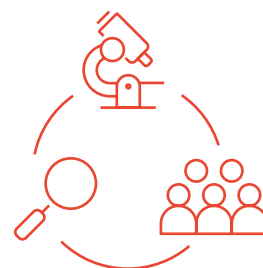
The results of this call helped fashion a multi-annual call for proposals programme, the first two of which have already been launched. Simultaneously, the Agency is developing partnerships for the dissemination of scientific culture, and has been taking part in the Science Festival since 2019, as well as the 'Et Maintenant ?' Festival since 2021 alongside France Culture and Arte.

A Science with and for Society policy to re-establish the pact between researchers and citizens

The Research Programming Law emphasizes three aspects of the relationship between science and society: sharing a common scientific culture and fostering democratic debate; involving as many people as possible in research; and supporting decision-making and public policies. On 30 April 2021, Frédérique Vidal, the French Minister of Higher Education, Research and Innovation, presented the Science with and for Society measure designed to establish greater familiarity, trust, and reciprocity in the relationship between researchers and citizens.

"Science is a common good, an important aspect of everyone's life, as well as the citizen's health of mind. It represents an essential part of our culture and, to this end, shares with art the privilege of giving meaning to our lives, giving us a taste for challenge, and hopes for the best. It is in every mind, every home, every environment, and in everyday life. And to take its rightful place, it cannot be satisfied with 'spreading' throughout society, as if flowing from the supposed pinnacles of research, nor can it settle debates with its authority alone: it must set out to meet society, offer itself to citizens, and take them along for the ride".

Extract from Frédérique Vidal's speech on 30 April 2021



The objective is to devote up to **1%** of the calls for proposals budget to dialogue between science, research, and society

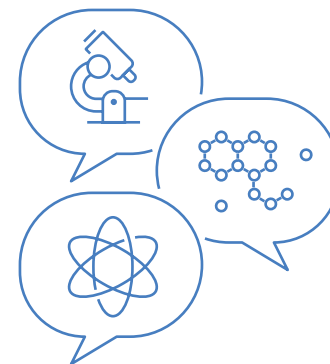
An AMI to identify the strengths, needs, and expectations of CSTI communities and stakeholders

In late February 2021, ANR launched a call for expressions of interest (AMI) to identify research efforts that can contribute to the Science with and for Society (SAPS) approach. Nearly 400 letters of Intent were received, reflecting the outstanding mobilisation of scientific communities and scientific, technical, and industrial (CSTI) stakeholders. Most of these proposals focused on basic research and experimental development. They covered various themes, including scientific mediation, participatory research, understanding a social phenomenon and its issues, along with innovative solutions.

A SAPS call for proposals programme with two components of action

The results of the AMI led ANR to propose a multi-year SAPS call for proposals programme, divided into two components. A first Research-Action component including several thematic calls to support research projects with a strong application dimension (implementation of solutions). These projects last from 12 to 24 months, and the maximum amount awarded per project is €80k.

A second Mobilising Researchers for CSTI and Scientific Mediation component, with several calls for proposals intended for selected coordinators from the 2018-2022 editions of the Generic Call for Proposals (AAPG). The goal is to provide them with additional funding to pursue technology transfer actions for their research, designed and implemented in collaboration with local, regional, and national scientific culture structures (CSTI centres, university cultural services, museums, cultural stakeholders, etc.).



↳ **ZOOM**

The 1st SAPS call for proposals: Research on Scientific Mediation and Communication

This call was based on the need for scientifically defined criteria to analyse and evaluate the impact of mediation and communication on target audiences; to recognise the components of an effective design for these activities; to identify favourable factors and obstacles; and to develop potential solutions. The call was addressed to researchers already conducting scientific efforts in this field or seeking to develop new lines of research on this theme, over a period of 12-24 months and for a maximum amount of €75-80k per project. Following the evaluation process, 15 projects were selected from the 56 eligible proposals submitted to the call. The selection rate of the call reached 26.8%. ANR's total funding amounts to €1.161 million.

↳ COMPONENT 1 Research-Action	↳ COMPONENT 2 Mobilising researchers for CSTI and scientific mediation
<ul style="list-style-type: none"> July 2021 A first call for proposals dedicated to scientific mediation and communication Late July 2022 A Participatory Science call 2nd quarter 2022 An Innovative Ambitions call 2023 Innovative Solutions call and Expertise and Public Policies call 	<ul style="list-style-type: none"> December 2021 A call dedicated to projects funded through the 2018 and 2019 Generic Call for Proposals (AAPG). September 2022 A call dedicated to projects funded through the 2020 AAPG. Late 2022-2023 Two calls focusing on projects funded through the 2022 and 2023 AAPG.

↳ **ZOOM**

The 1st Mobilising Researchers for CSTI and Scientific Mediation call

A first call, launched on 21 December 2021 and closing on 24 February 2022, focused on JCJC and PRC projects funded in 2018 and 2019. The steering of this contribution was entrusted to managing institutions, and involved the following aspects: notifying the institutions regarding funding (around €2,500 per project); drafting a project scope statement by the institutions describing their planned communication and mediations, as well as the management scheme; and considering the possibility of mutual on-site actions. 56 project scope statements were submitted, involving 112 organisations or institutions and over 1,265 projects.

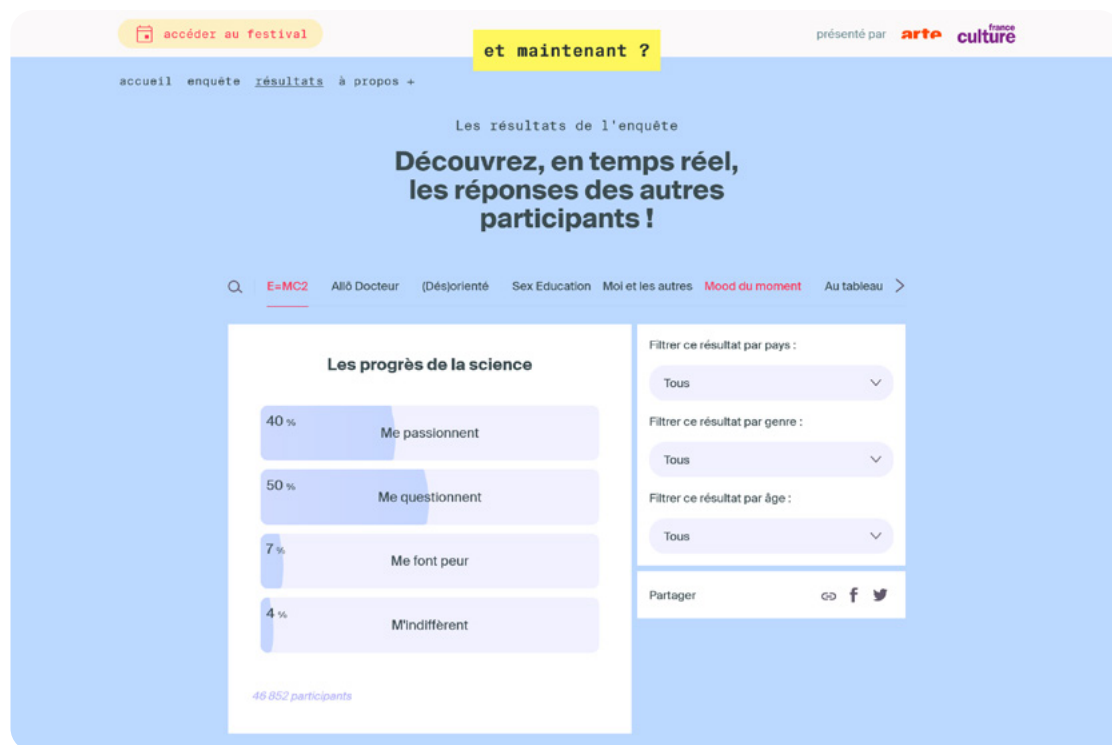


» The 'Et maintenant ?' Festival for Tomorrow's Ideas. A partnership with stakeholders in public broadcasting

What are the concerns of 18 to 30-year-olds in a world dramatically impacted by the Covid-19 pandemic? In October and November 2021, the France Culture and Arte media outlets, and several partners including ANR, surveyed young people via an anonymous questionnaire. This questionnaire, developed with the sociologist Monique Dagnaud, the Project Leader at the French National Centre for Scientific Research, was structured around five main themes, and included 130 questions. The six million or so responses collected (from nearly 60,000 respondents) inspired the programming for the "Et maintenant ?" Festival, which was held on 29 November 2021, both online and at the Maison de la Radio et de la Musique in Paris.

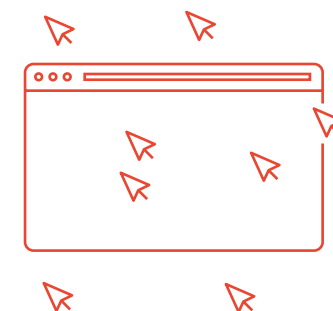
To open the day, the "Et maintenant?" Prix de l'essai (Essay Prize), supported by ANR, was awarded to Charles Stépanoff for *L'animal et la mort : Chasses, modernité et crise du sauvage* (La Découverte Editions). In this book, the anthropologist uses a two-year field survey to highlight the anthropological and ecological foundations of violence on living organisms, revealing the "empathetic predator" figure. The award ceremony was an opportunity for Thierry Damerval, President and CEO of ANR, to remind everyone that Charles Stépanoff was involved in the LifeChange project funded by the Agency, and to reaffirm the importance of supporting the social sciences and humanities, which can shed light on the sometimes brutal and deep transitions our world is going through.

You can view the complete festival at: www.youtube.com/playlist?list=PLKpTasoeXDrro3EFRRLO8CM7Bn47zrJ8x



An extensive programme and exceptional speakers

Cyril Dion, Aïda N'Diaye, Christiane Taubira, Philippe Rio, François Taddei, Loïc Blondiaux, Esther Duflo, Michael Sandel, Amitav Ghosh, Aurélie Jean, Monique Tnumngia, Jean-François Delfraissy, Étienne Klein, Lexie, Dominique Méda, Thierry Pech, Jérémie Peltier, Catherine Hill, Chloé Delaume, Inès Léonarduzzi, Marin Fouqué, Monica Sabolo, Réjane Sénac, ...

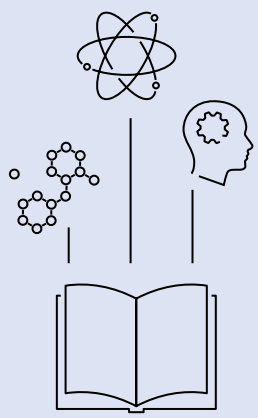


100,000
views
throughout
the day

ANR is committed to Open Science

ANR has been committed to promoting open science since 2007, and is actively taking part in implementing national plans, the latest of which was launched by French Minister Frédérique Vidal in July 2021. The Agency's various actions, now supported by the new Digital Strategy and Data Division, have three main objectives: to encourage open access to scientific publications; to contribute to open research data in accordance with the principle of "as open as possible, as closed as necessary" ; and to promote a coordinated approach at the European and international level.

THE CONCEPT



Open Science refers to the constant and unhindered dissemination of scientific publications and data. Open Science is more cumulative, more heavily supported by data, more transparent, faster, and more universally accessible. It democratizes access to knowledge, which is useful for research, training, the economy, and society. It helps strengthen scientific integrity as well as public confidence in science.

A second, ambitious National Plan for Open Science

The 2nd National Plan for Open Science (PNSO), launched on 6 July 2021 by Frédérique Vidal, Minister for Higher Education, Research and Innovation (MESRI), will be implemented from 2021 to 2024. The plan, which is more than a simple update, has a new ambition in line with that of the European Union: to make Open Science the default practice. The assessment of the 1st National Plan for Open Science, published on this occasion, highlights the role of ANR and other research funding agencies in fostering open access to scientific publications.



The three main priorities of the 2nd PNSO:

1. Widespread open access to publications
2. Structuring, sharing, and opening research data
3. Access and promotion of source code generated by research

ANR is pursuing its action for publications in open access

In 2021, ANR made the Rights Retention Strategy part of its 2022 Work Programme, in accordance with its commitment to cOAlition S, an international initiative in favour of full and immediate open access. In accordance with Article 30 of the New Digital Republic Bill, ANR had already called for project coordinators and their partners to upload in an open archive any of their scientific publications (full text) that resulted from funded work.

Moving forward, all scientific articles must be uploaded at the time of publication under a Creative Commons (CC-BY) licence or equivalent in the national open archive HAL. This is another step towards full and immediate access to scientific publications emerging from publicly funded research.

ANR, already heavily involved in the promotion of bibliodiversity, also took part—alongside Science Europe, Operas, and cOAlition S—in developing a Diamond Open Access Plan, a scholarly publication model in which journals and platforms are available for free for authors and readers alike. “Diamond” scientific journals are already major actors in global scientific communication. They publish 9% of the total volume of articles, 45% of which are in open access. The Action Plan, which will be published in 2022, is the result of a collective effort, and aims to internationally unite the stakeholders in this fair and sustainable model by helping them strengthen “diamond” journals and platforms, and to increase their visibility.

Availability of ANR's Thematic notebooks

To mark the 20th anniversary of the HAL Open Archive in November 2021, and to expand its action in favour of open access to publications, ANR provided its own editorial productions on the HAL-ANR portal. Neurodegenerative diseases, risks and natural disasters, the contribution of genomics to agroecology... ANR's Thematic Notebooks explore the interdisciplinary thematic issues in the Agency's various calls for proposals. Intended for researchers, decision-makers, and anyone else interested in the topic, these publications provide a summary of the projects funded in each field, putting current research and innovations into perspective. Created in 2009, the collection now includes 13 issues, which can be easily accessed in just a few clicks.



38,204
documents available
by the end of 2021
on the HAL-ANR
portal

Digital Strategy and Data Division: towards a new data culture

In September 2021, ANR created a new division in charge of Digital Strategy and Data (DSD), and appointed Martine Garnier-Rizet as its director. She is responsible for designing and deploying a data policy and culture in support of the Agency's other directorates, in close collaboration with its supervisory ministry as well as the entire research ecosystem. Data is central to ANR's work, and is collected at each stage of the research project life cycle: submission, evaluation, selection, contract negotiation, monitoring, and impact review.



A word from **Martine Garnier-Rizet**

Director of Digital Strategy and Data,
ANR

“The DSD, which includes three departments, endeavours to strengthen ANR's approach to performance, transparency, and openness, as set out in its Objectives and Performance Contract for 2021-2025. The Data department develops data governance, and ensures that the data collected is processed and of high quality. The department is also responsible for making them available on data.gouv.fr. The Assessment, Studies, and Impact Department oversees the use and publication of data, with a view to producing and disseminating studies to public policymakers and broader society. The Open Science department is in charge of supporting the transition towards Open Science by implementing a dedicated policy. Finally, the DSD coordinates the appelsprojetsrecherche.fr portal, which facilitates access to funding, and is supported by six funding stakeholders (ADEME, Anses, Inserm/Anrs-MIE, INCa and ANR).”

ANR at the forefront of gender equality in higher education and research

In collaboration with the research ecosystem, ANR carries out various actions to reduce gender bias in project evaluation processes, to give greater consideration to sex and gender in scientific research, and to help develop an egalitarian culture. As part of its monitoring role, in 2020 ANR implemented a Work Plan for Gender Equality and Gender Mainstreaming, and collects data for each call for proposals it launches. In 2021, the Agency published a statistical review of the gender breakdown for projects funded over the previous six years.



Laurence Guyard

Scientific Communities Relations Manager, Equality and Scientific Integrity Officer, ANR

Were there any developments in 6 years of AAPG?

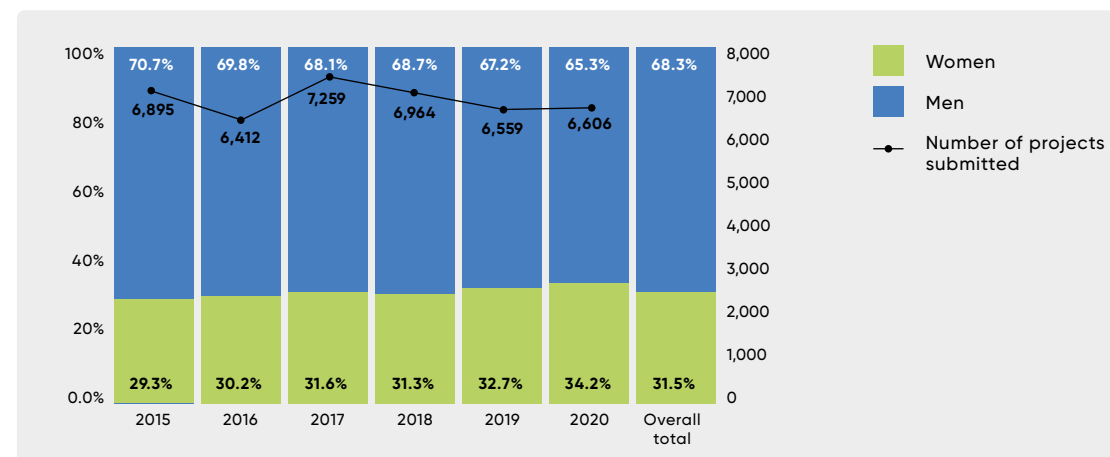
The Gender in ANR Projects report provides a statistical overview of the gender breakdown over the 2015-2020 period for projects funded by ANR through its Generic Call for proposals (AAPG). It considers various characteristics: project evolution by editions, breakdown by funding instrument, disciplinary field, age, status, region, etc.

The statistics collected must boost in-depth analyses, identify any gender biases in project evaluations, and if necessary initiate remedial actions. Laurence Guyard, Equality Officer at ANR, presents some results and avenues for analysis.



The full report is available online at: anr.fr/fr/actualites-de-lanr/details/news/femmes-et-hommes-dans-lappel-a-projets-generique-aapg-lanr-poursuit-et-enrichit-ses-analyses/

Breakdown by gender of project coordinator

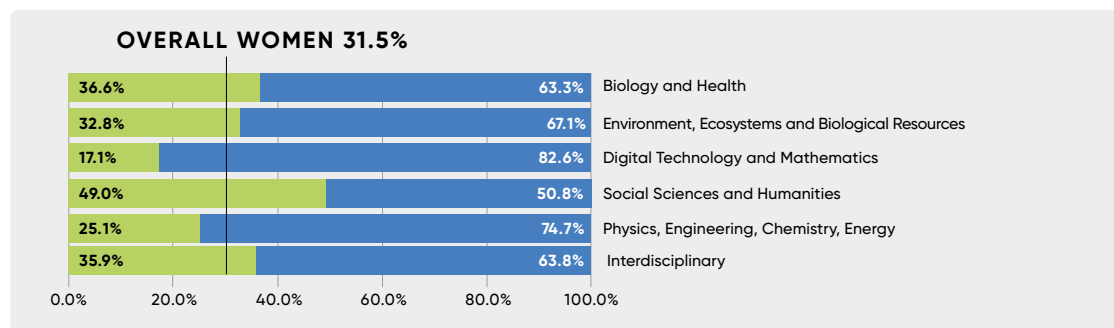


LAURENCE GUYARD'S ANALYSIS

"Analysis of the results shows that there is a steady increase in the number of projects coordinated by women. It increased by 5 points between 2015 and 2020 (2,021 projects in 2015 vs. 2,257 in 2020), while the number of projects coordinated by men steadily decreased (4,872 projects in 2015 vs. 4,313 in 2020).

This may be indicative of an ongoing reorganisation of the division of labour between women and men within laboratories, encouraged by the Civil Service Transformation Act of 2019, which mandated Equality Action Plans in institutions. That being said, there are still significant differences depending on the discipline."

Project breakdown by discipline and gender of project coordinator

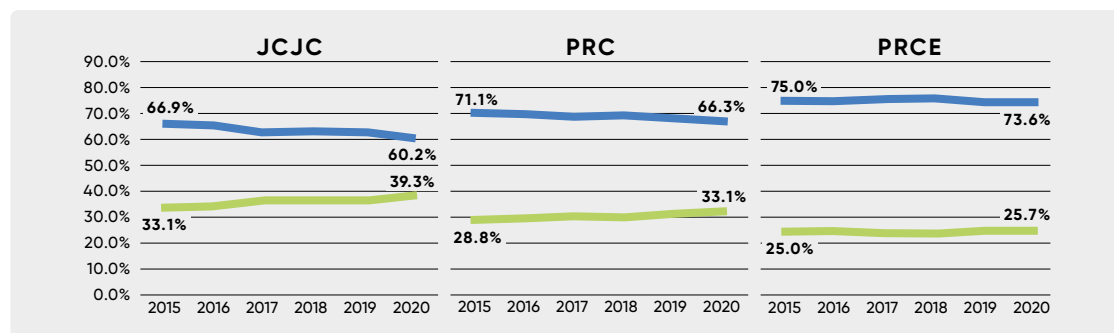


LAURENCE GUYARD'S ANALYSIS

"On average, in the last six years, the breakdown of ANR projects by the gender of the coordinator reflects what is happening at national level in every major scientific discipline. The proportion of female coordinators is most significant in SSH.

In contrast, there is a remarkable discrepancy in biology and health, where they are under-represented (36.6%), even though they represent the majority (over 60%) in these disciplines. This does not mean that women are not involved in these projects, but that they are not in charge, and are therefore invisible."

Project breakdown by funding instrument, according to gender of coordinator

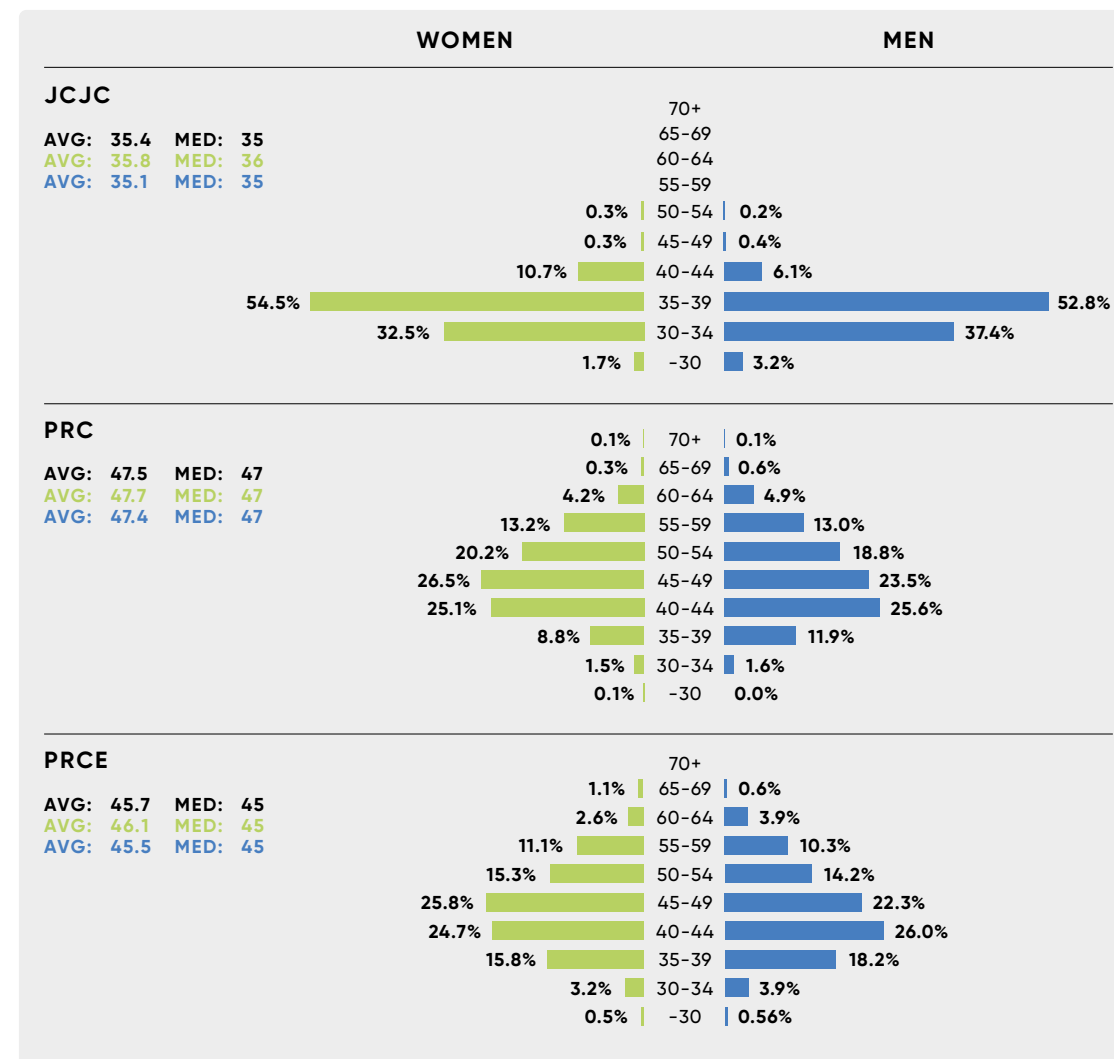


LAURENCE GUYARD'S ANALYSIS

"In the last six years, the increasing proportion of female coordinators in the AAPG's three main funding instruments has been significant. The growth is substantial for JCJC projects (+6 points), probably because women have been eligible for longer than men; the fact that ANR grants them exemptions when they have children may have contributed to this.

Another probable reason is that women tend to accumulate evidence for their skills before allowing themselves to apply for larger collaborative projects, such as PRCs or PRCEs. But we must be careful with this notion of self-censorship, which masks the difficulties women face when trying to take on scientific and managerial responsibilities".

Coordinator age pyramid by funding instrument



LAURENCE GUYARD'S ANALYSIS

"The age pyramid demonstrates these difficulties. Women coordinate ANR projects at a later age than men. When it comes to JCJC projects, 40% of male coordinators are under 34 years old, compared to 34% of female coordinators. As far as PRC and PRCE projects are concerned, women are mostly present in the 45-49 age group, while the percentage of men in these projects is decreasing.

This reflects well-documented disparities: it is more difficult for women to find a job in academia (6 to 8 years after completion of their PhD, while men take 3 to 4 years) and when they do, they hold more precarious jobs (post-docs, fixed-term research contracts, adjuncts). This does not allow them to submit projects as coordinators."

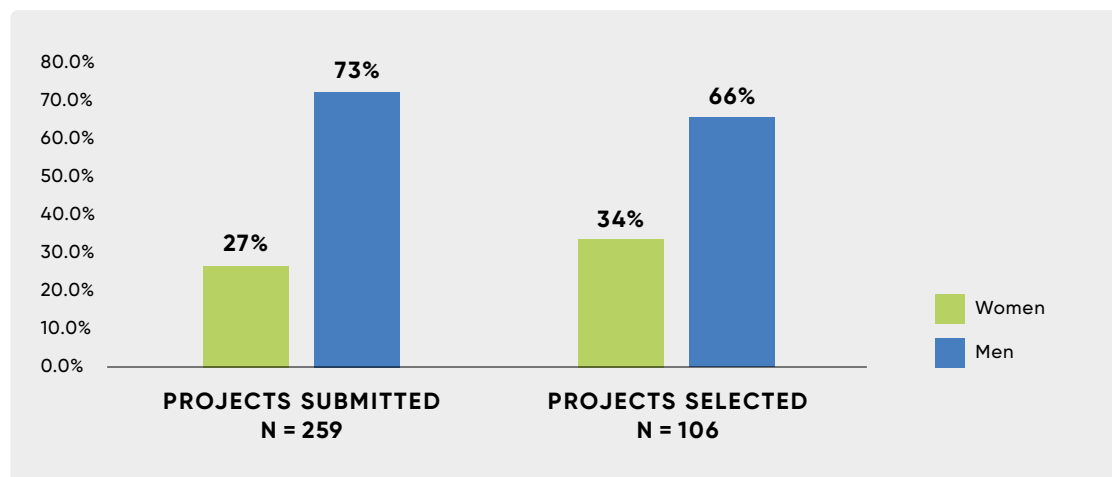
↳ A look back at the Covid-19 Flash call for proposals

Launched from 6 to 23 March 2020, the Covid-19 Flash call met an urgent need for knowledge in biology, health, and the social sciences and humanities. Four research themes were targeted: ethics and SSH fields associated with the response; epidemiological and translational studies; physiopathogenics of the disease; and prevention and control of infection. The call accelerated the pace of research, which was already under time pressure from a health, political, economic, and media perspective. Researchers responded during lockdown, with studies showing a fairly different impact on men and women.

In research, these differences resulted in lower scientific productivity for women, and an increase in publishing for men. It was therefore necessary to assess women's capacity to respond to the Flash Covid-19 proposal. In honour of International Women's Day on 8 March 2021, ANR published a detailed analysis on the issue. A brief overview is available here.



The full report is available online at: anr.fr/fileadmin/documents/2021/Analyse-F-H-Flash-Covid_08mars2021.pdf



↑ Project breakdown by gender of coordinator, and by status (Covid-19 Flash)

LAURENCE GUYARD'S ANALYSIS

"While there are proportionally more women in biology, health, and SSH, which are the fields more specifically concerned by the Covid-19 Flash call, men are in the vast majority at the submission stage (73%). However, the proportion of women increases at the selection stage (34%), indicating the absence of gender bias against them.

The over-representation of men could be explained by their greater willingness to submit a project regardless of its degree of maturity, whereas women only allow themselves to do so when they are certain that their application is quite strong, which in this case was statistically favourable to them in terms of success."

↳ ZOOM

Health crisis and gender inequality

Several surveys conducted as part of projects funded in the Covid-19 calls for proposals have shown intensified gender inequality. During the first lockdown, women spent more time than men on unpaid work such as domestic activities, caring for others, and the supervision of schoolwork (COCO and DYNPANDEMIC). In addition, women in intermediate occupations, or who were employed, unemployed, or retired, were more likely to be Covid-19 positive than men in the same socio-professional categories (Epidemic).



PHOTO: NATHAN DUKLAO / UNSPLASH

↳ ZOOM

Gender-SMART: Make Equality Bloom campaign

A European consortium entitled Gender-SMART (Gender in Science Management of Agriculture & lifesciences, including Research and Teaching), bringing together seven funding and research organisations including ANR, works towards gender equality in research and teaching in the fields of agronomy and life sciences. In 2021, the consortium pursued its action through the Make Equality Bloom communication campaign: gender-smart.eu/about-the-project/makeequality-bloom-campaign/





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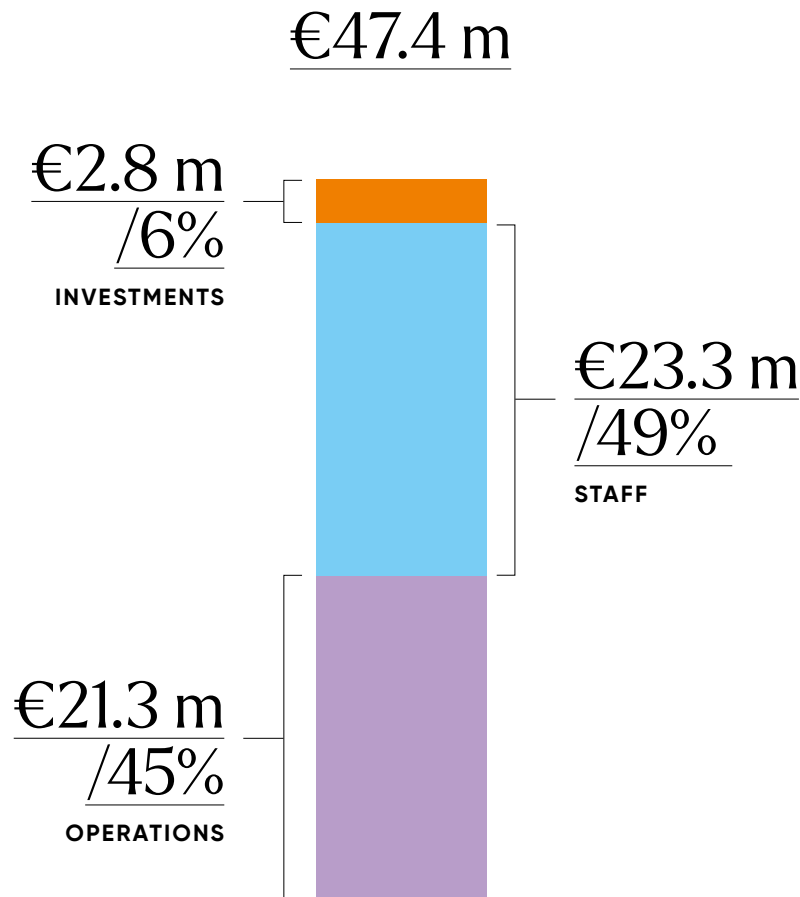
Inside ANR

Key figures

Operating budget

ANR's operating budget—not to be confused with the budget for funding research projects—focuses on operational, staff and investment expenses. In 2021, it included €45.6 million in commitment authorisations, and €47.4 million in payment appropriations.

It is financed in the amount of €30 million by a grant for public service expenses, as well as by the management fees received from co-funding organisations, and by the payment of expenses incurred for the management of the French government's major investment programmes by the General Secretariat for Investment (SGPI).



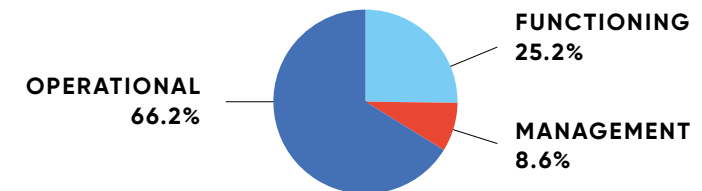
↑ Operating budget breakdown by payment appropriation

The Agency's staff

The overall number of employees at ANR is 373, 15% more than in 2020. The recruitment of 50 people is explained by an increase in activity, the implementation of the LPR, the French Recovery Plan, and the France 2030 Plan.

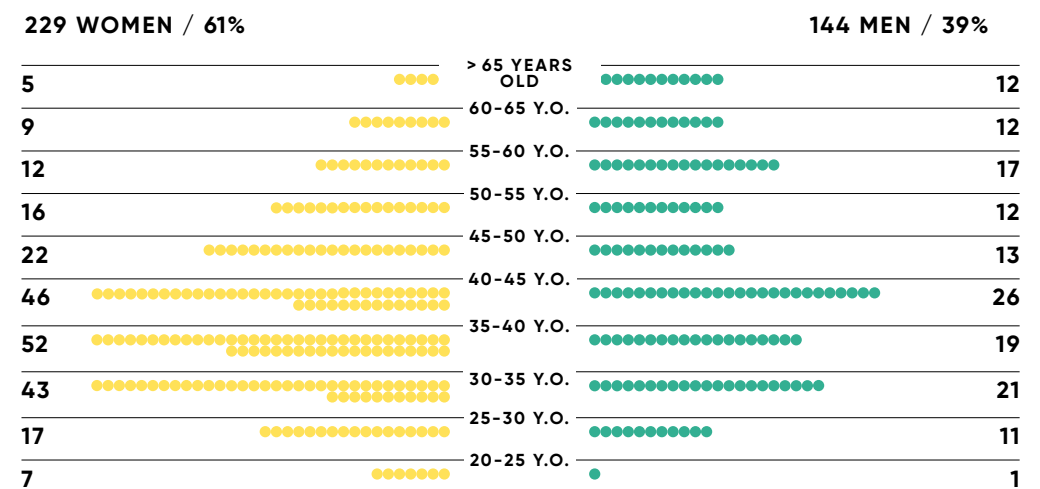
The operational sector was strengthened in particular (66% compared to 63% in 2021). Women are over-represented overall (61%), especially in the 30-50 age group (67%), but the trend is reversed over the age of 50 (44%).

320 FTE



↑ Breakdown of the overall staff by sector

373 individuals



↑ Age pyramid by gender

A proactive policy on diversity and quality of life at work

While the measures introduced by ANR to combat Covid-19 illustrate the top priority given to the health of its teams, the Agency is more generally committed to continuously improving the quality of life at work, as well as creating an atmosphere conducive to the development and fulfilment of all. Ranging from greater consideration of disability to combatting all forms of discrimination and consultation regarding the future office location, the HR projects carried out in 2021 are wholly in keeping with this proactive policy.

© Moving in 2022: a decision made in consultation will all staff members

While ANR expects significant short- and medium-term growth in its staff, the lease on its current premises expires at the end of 2022. In 2021, the Agency conducted an in-depth review of its real estate strategy (review of existing properties, identification of needs, study of commuting times, projection of surfaces areas, etc.) in close collaboration with French government departments (MESRI and the French Directorate for State Owned Property). This review, regularly communicated within the Agency, led to the selection of two sites. Managers and staff representatives were then consulted, and visits were made.

Finally, to consolidate the consultation process, in late 2021 all staff members were invited to express their views as part of an extended vote marked by strong participation (240 voters out of a total of 373 employees). Confirming the plan developed with members of ExCom, the CHSCT, and the CTE, a clear majority (56.25%) was in favour of Kadence in the 13th arrondissement of Paris, while the second option received 22.92% of the votes. In addition, 13.33% of respondents expressed support for both options, while 7.5% said they did not have an opinion. The move is planned for autumn 2022.



▾ Improving quality of life at work... for everyone!

In an effort to provide the best possible working conditions, in 2020 ANR signed a Charter for Occupational Health Safety and Consideration of Disabilities. The implementation of this charter continued throughout 2021.

Inclusive recruitment policy and consideration of disabilities

To promote the recruitment of people with disabilities, the Agency first joined a CV bank and two specialised digital recruitment expos. There were immediate results, as six external individuals were recruited during the year. Consequently, the direct employment rate for disabled workers has increased significantly from 2.13% at year-end 2020 (6 people) to 4.17% (15 people) at year-end 2021. The COP has set a target of 6% for 2024. This increase also reflects the change in attitudes within the Agency, which has led some staff to apply for and obtain recognition as disabled workers. The subject of health has been normalised, and is now systematically addressed during annual assessment interviews (AAA) with an open-ended question ("Would you like to make an appointment to discuss a health-related issue?"). This question, asked for the first time in our 2021 campaign, resulted in twenty-two appointment requests, proving the relevance of such a measure.

A new protocol for the prevention, reporting, and treatment of VDDBS

The process of preventing, reporting, and treating psychosocial risks (PSR) was extended in 2021 to include acts of violence, discrimination, bullying, and sexist behaviour (VDDBS). Like the RPS protocol, which is familiar to all staff, the new VDDBS protocol relies on liaisons (staff representatives, staff trained in prevention techniques, and Equality Officers), who can be contacted by witnesses or directly by the victims of these acts. Whether or not it is confidential depends on the wishes of the individuals concerned. A report is made to the Monitoring and Guidance Unit, and an investigation is subsequently conducted, potentially leading to sanctions if the facts are confirmed. A conference and training sessions were organised prior to its implementation, a necessary phase for its cultural integration; in order for everyone to become aware of the issues and the protocol, and to make recourse to it if necessary.

© Health is a priority in the face of Covid-19

A set of sanitary measures was adopted when the Covid-19 pandemic began, progressing over time and in accordance with CHSCT meetings, including widespread use of home working, support from the prevention division, strengthened internal communication, etc. These measures were checked and certified by AFNOR in March 2021. This is proof, if any were needed, that team health is a real priority for the Agency. ANR has met 98% of the requirements listed in the audit, based on a reference document of 110 criteria.

A passion for science

ANR employs people from various professions in its nine divisions and one accounting agency, and relies on the commitment of more than 370 employees—a growing workforce matching the Agency's increasing activity. Whether they come from a scientific or other background, and regardless of their activities, they all implement project-based research funding. They contribute with passion to developing scientific and technological knowledge, in the service of researchers. Four personal portraits.

In connection with this Annual Report, the photographer Myr Muratet created a photographic report within the walls of ANR.





Virginie Joulin
Biology and Health Thematic Coordinator
& Action Manager
Major Government Investment Programmes
Division (DGPIE)



Marc Boli
Administrative and Financial
Manager
Contract Department,
Contract and Funding Division
(DCF)

Bertrand Fourcade
Scientific Manager Physics,
Engineering, Chemistry,
And Energy Department
(SPICE), Scientific Operations
Division



Fanny Lachat
Scientific Project Officer,
Digital Technology and Mathematics
Department (NUMA),
Scientific Operations Division (DOS)



How did you start working at ANR?

Bertrand Fourcade

I have been working since 2018 as a Scientific Manager at ANR, but first and foremost, I teach physics at the University of Grenoble. I specialise in modelling, between physics and cell biology. We can divide a university professor's schedule into three components: one third is devoted to teaching, one third to research, and a final third to management. I chose to focus, out of curiosity, on this final third, which is actually more than a third at ANR compared to a university.

Virginie Joulin

As a Project Leader at Inserm, I worked in several laboratories over the past twenty years, learning different experimental approaches (molecular and cell biology, animal testing, cohort studies, etc.) in various specialities. At Gustave Roussy, I wanted to devote some of my time to management, in order to help researchers (institutional funding applications, implementation of joint services, etc.). I also wanted to support research on a different scale. It turns out that a position opened at the DGPIE meeting my exact needs: something highly multidisciplinary! I arrived at ANR on 1 June 2013 as a Thematic Coordinator (TC) in biology and health, first at 50% of my time, and then 80% when new calls for proposals were launched. I have also served as Action Manager over the past year.



Marc Boli

I am a native of Orly in Val-de-Marne, and I hold a Bachelor's Degree in Social and Economic Administration from the University of Évry-Val d'Essonne, and a Master's Degree in Public Administration and Management of Local Authorities from Paris XII. Before I arrived at ANR, I worked as a Training Assistant for another public institution. My contract was about to end, and I wanted to breathe new life into my career when I found a job offer from ANR, to which I successfully applied. I was happy because I have been watching scientific documentaries since I was a child.

Fanny Lachat

I have been working at ANR since November 2019. I completed a PhD in neuroscience and held several post-doctoral positions in Finland, Sweden, Brazil, and Paris. I later worked for an open access scientific journal in London. Then, because of my desire to return to France, and to do something different related to science and researchers, I applied for the position of Scientific Project Officer at ANR, focusing on artificial intelligence (AI), which suited me perfectly because I know this field very well.



What is your role at ANR?

Marc Boli

As an administrative and financial manager, I monitor the drafting of contracts between beneficiaries and ANR, and I implement the modification decisions that mark the life cycle of projects, such as the change of administrative supervision for a coordinator. I manage four AAPG Panels and the specific calls of the Digital Technology and Mathematics Department, namely 786 beneficiaries. I work closely with Scientific Project Officers (SPOs). During kick-off meetings, I present the administrative and financial section to beneficiaries and answer their questions. I also take part in the quality audit, so our procedure can be ISO 9001 certified. They are particularly rigorous. Just to give you an idea, the documents I draw up are subsequently checked by four people!

Fanny Lachat

Since my arrival, I have been fortunate enough to take part in about ten proposals, including non-AAPG national, AAPG, and international proposals.

My responsibilities are truly diverse: creating and writing calls according to the needs of the community; organising selection committees; and scientific follow-up, namely reading and approving reports and communicating with researchers. Between SPOs we help one another quite a lot, but I also interact with other departments, such as the Legal Affairs Division, to make sure that we follow the rules when creating a new call, and with the Contract and Funding Division to draft the contract that activates the funding for each project.

Bertrand Fourcade

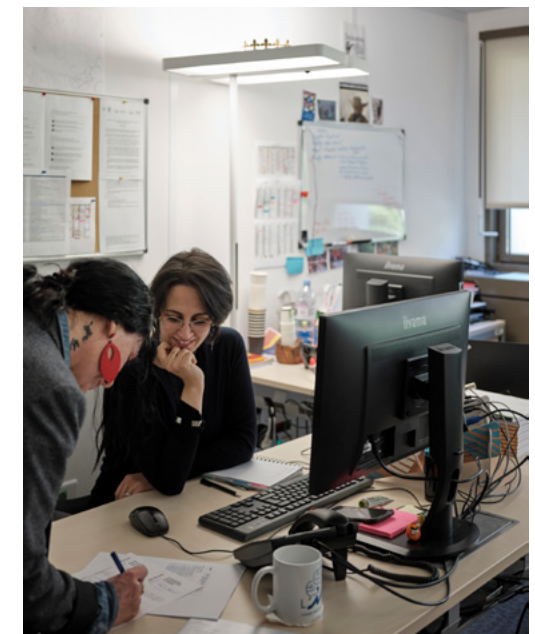
The role of the Scientific Manager varies enormously depending on the department, the Scientific Evaluation Panels (CES) you oversee, etc.

My role is to manage four CESs from the Generic Call for Proposals, a team effort with four Scientific Project Officers. I ensure that these CESs work well. I interact a lot with the chairs and offices of the committees, I support them, I translate the language of ANR into laboratory language. I also take part in writing calls, in "inter-CPP"^[1] meetings to define the AAPG's programme, and even in regional calls for proposals as rapporteur.

Virginie Joulin

TCs are tasked with the scientific follow-up of each project, both annually and occasionally, for instance when a scientific objective changes.

We are asked to draft scientific reports, thematic summaries, and end-of-project reviews. Our tasks also include implementing the recommendations made by Interministerial Steering Committees and the General Secretariat for Investment, in addition to organising ex-post evaluations. We also respond to requests for information from the French government, the French Parliament, and various inspection units (about twenty since I arrived at ANR), and take part in implementing the next investment programmes. I am sure I am forgetting a few! Finally, the Action Manager is responsible for setting up the call for proposals, organising the selection process (e.g., international jury), start up support for each project, the annual action review, mid- and end-of-term evaluations. And I'm sure I'm still forgetting something!



[1] Programming Advisory Panels

What do you like most about your position?

Bertrand Fourcade

Talking to people who are not part of my scientific community! I am not the advocate of my own field: I like to see what is happening elsewhere, identify weak signals, understand the emerging themes that will structure research in the years to come. And then I see beautiful things, exciting research projects led by remarkable people. I even feel a little jealous sometimes! But I know that what I do at ANR is essential for the proper functioning of the community: we must maintain the connection with laboratories to avoid straying off course.

Fanny Lachat

On international calls, I really enjoyed working with German and Japanese agencies, learning about their culture, how they work, and making sure we are compatible. Of course, I really enjoy working with science, attending Evaluation Panels or kick-off meetings, listening to researchers presenting the applications received, or their own projects. Some of them are particularly memorable. I am thinking of HUMAINE, a chair in AI coordinated by Laurence Devillers. In this project, which focuses on the detection of socio-affective states, I found everything I like: a bit of neuroscience, some behavioural psychology, and lots of AI!



Marc Boli

What I like most is the human relationship with the beneficiaries. A Scientific Manager calls me, he or she needs the agreement quickly; I offer reassurance and find a way to comply with the request. I have increased responsibilities and am gaining experience, but I have not covered all existing issues! During the health crisis, my team was highly active in funding the Flash, Research-Action, and Resilience calls. It made sense to quickly prioritise all these projects.

Virginie Joulin

There are so many different tasks and questions asked that every day is different. Here, I am entirely in the service of science. I work for researchers, for research: national infrastructures in biology and health, Labex, Equipex, and Equipex+ cohorts, etc. All these major national projects are essential, there were so many gaps.



Efficient institutional management to better serve beneficiaries

ANR's organisation seeks to be agile and adaptable to the guidelines of public research policies, with a view to providing quality service to beneficiaries. To increase the satisfaction of scientific communities, the Agency is committed to continuously improving its processes, namely by listening to its users and stakeholders. The complementary risk management and simplification processes included in its new Objectives and Performance Contract have continued, strengthening ANR's resilience, reliability, and transparency.

Improved risk management

ANR is committed to a risk management approach combining internal control and quality, in an effort to best perform its missions and fulfil its commitments to its users. ANR established a Risk Management Committee in 2021 to complete the structuring of this approach.



Internal control and quality approach

Internal control refers to the means used to ensure the reliability of the Agency's budgetary, financial, and accounting information. Since 2018, ANR has been simultaneously pursuing a quality approach for the standardisation of its practices, tracing operations, knowledge capitalisation, and risk management. The Agency is pursuing an ISO 9001 certification for all its processes, with the certified perimeter expanding each year. After project selection (2018-2019) and user relationship management (2020), the publication of calls for proposals will be certified in 2021.

A second unqualified account certification

The certification of accounts, which was perfectly executed at the initiative of ANR, offers further proof of the staff's hard work. Appointed as statutory auditor for six years (2020-2025), the Mazars audit firm gave an unqualified clean opinion, for the second year in a row, on the accounts for 2021, approved by the Governing Board on 15 March 2022. The unqualified account certification, which was included in the Objectives and Performance Contract, was targeted for 2024. Since 2020, it has attested to the sincerity of the annual accounts and the reliability of the Agency's financial information—a strong signal of professionalism and credibility at a time when its budget has increased significantly.

An improved risk map

The Agency's risk management approach focuses on reviewing major risks, ensuring that it successfully carries out all its missions, and that its commitments to users can be met. This scheme includes a «risk map», a method to identify and rank internal and external risks (societal and human; financial, legal and regulatory; organisational and IT; strategic, etc.). It combines the treatment of the main risks with an appropriate operational level to reduce the Agency's exposure. The increase in activity induced by the French Recovery Plan and the new Research Programming Law (LPR) required improvements to this document. To this end, all ANR divisions were called upon in 2021. The map now incorporates, as one example, the risks associated with the Agency's move in 2022, with the move itself anticipating the need to increase HR resources in the coming years.

A new authority: the Risk Management Committee

Finally, the creation in November 2020 of a Risk Management Committee (RMC), which met for the first time in 2021—on the recommendation of The High Council for Evaluation of Research and Higher Education (Hcéres), and in accordance with the current COP—completes the structuring and optimisation of ANR's risk management process. This new supervisory body, attached to the Presidency and reporting to the Governing Board (GB), works with and on the map covering major risks. The RMC must inform the GB regarding the efficiency of risk coverage. It should also ensure that all of the agency's resources are optimally managed, and that risk management is resourced. Finally, it should analyse the risks arising from the increase in the agency's activity.

Recasting ANR's financial regulation: the preciput rate increased to 25%

In accordance with the Research Programming Law (LPR), ANR's financial regulation included significant changes regarding the preciput. ANR's 2021 budget helped increase its preciput rate to 25%, for a total amount of approximately €163 million.

↳ Simplifying administrative and financial project monitoring

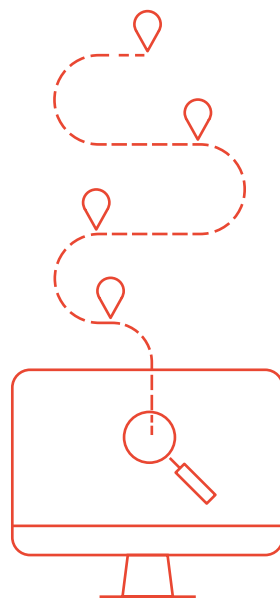
Concerned about the service quality provided to its beneficiaries, ANR has in recent years simplified the documents addressed to project coordinators and managers, from application to assessment. In 2021, the Agency's efforts focused on the monitoring process, whose ISO 9001 certification is scheduled for 2022.

A variety of facilitating tools

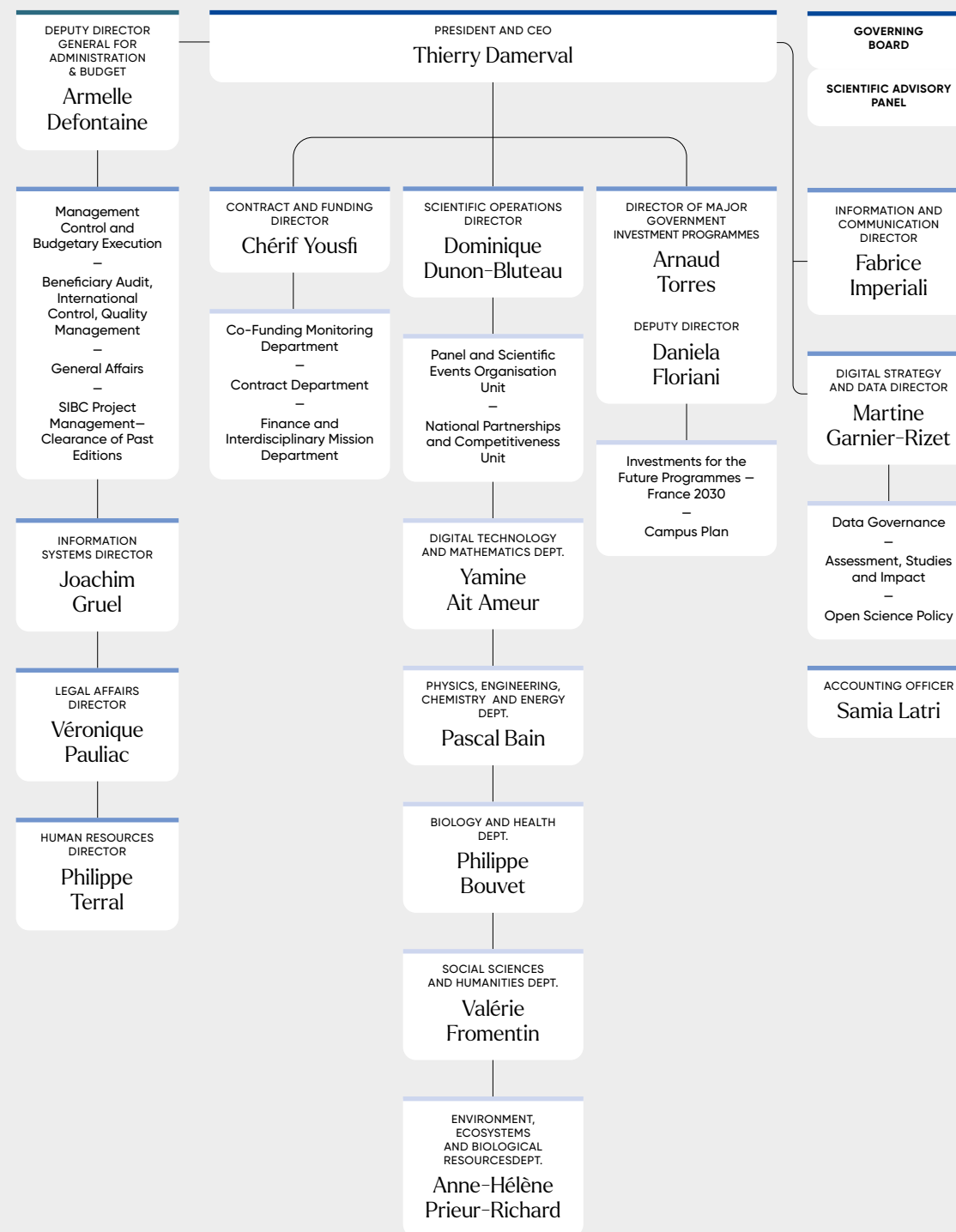
ANR developed a wide selection of tools for beneficiaries to facilitate administrative and financial follow-up. The provision of Initial feedback from attributions (contracts) in the Business Information System (SIM)—an IT platform shared by ANR and beneficiaries—accelerates the start of projects. A fungibility calculation tool now allows beneficiaries to determine whether the changes they make to their budgetary annex comply with prevailing regulations, and if necessary to apply for an exemption. A new form simplifies the transfer of funds between two partners. Two other tools, intended for ANR teams, optimise the processing of applications: Refer, a repository of judicial, legal, and banking information for beneficiary institutions; and ANAFIJ, a software program that provides information about the result of financial analyses for all leaders requesting funding.

The project monitoring portal

A new project monitoring portal, a cornerstone of this process towards simplification, was deployed by ANR in October 2020 after a beta launch within eight pilot institutions in late 2019. It is designed for project coordinators, principal investigators, laboratory directors, administrators, administrative and financial managers, and host institutions. The tool is easy-to-use and has an intuitive interface, with its consolidated view of key information allowing users to monitor all ANR research projects at any time and in real time, along with the respective preciput. An in-depth satisfaction survey has proven incredibly positive: the new portal is already well identified and appreciated by both administrative staff and scientists. As an evolving tool, it will gradually integrate new features. The integration of a CRM (Customer Relationship Management) module to trace all requests from users, with a view to centralising exchanges and preserving a history, has mobilised ANR teams throughout 2021.



Organisation chart



The Governing Board

as of 31 December 2021

The members of ANR's Governing Board are appointed by Decree of the Ministry of Higher Education, Research, and Innovation.

President : Thierry Damerval

As representatives of the French State:

- Mrs. Claire Giry, Director-General for Research and Innovation, and Mrs. Marine Camiade, Director of Financial Affairs, full members representing the Minister of Research;
- Mr. Vicent Motyka, Head of Performance, Funding, and Contract Negotiation with Research Organisations, and Mr. Guilhem de Robillard, Deputy Director of the Research and Higher Education Budget at the Financial Affairs Division, substitute members representing the Minister of Research;
- Mrs. Anne-Sophie Barthez, Director-General of Higher Education and Employability, full member representing the Minister of Higher Education;
- Mrs. Caroline Ollivier-Yaniv, Coordinator of the College of Scientific and Educational Advisors in the Higher Education and Employability Division, substitute member representing the Minister of Higher Education;
- Mr. Benjamin Delozier, Head of the Competitiveness, Innovation, and Business Development Department, Directorate General for Enterprise (DGE), and Mr. Michel Schmitt, member of the General Economy Council (CGE),

- full members representing the Minister of Industry;
- Mrs. Nathalie Homobono, member of the General Economy, Industry, and Technology Council (CGE), and Mr. Arnaud Delaunay, Deputy Director of Innovation at the Directorate General for Enterprise, substitute members representing the Minister of Industry;
- Mr. Alban Hautier, Deputy Director of the Third Budget Division, full member representing the Minister of the Budget;
- Mrs. Agathe Rolland, Head of the Research and Higher Education Office in the Budget Division, substitute member representing the Minister of the Budget.

As qualified representatives from major scientific fields, including at least one representative from the Conference of Directors of Higher Education Institutions:

- Mr. Mohammed Benlahsen, President of the University of Picardie Jules-Vernes and President of Ancre Alliance, full member;
- Mrs. Michèle Rousseau, Director General of BRGM, substitute member;
- Mr. Gilles Bloch, President of INSERM and President of the Aviesan Alliance, full member;
- Mrs. Elsa Cortijo, Director of Basic Research at CEA, substitute member;
- Mrs. Carole Caranta, Deputy Director General of Science and Innovation at INRAE, full member;
- Mr. François Houllier, President and CEO of IFREMER and President of the AllEnvi Alliance, substitute member;
- Mrs. Marie Gaille, INSHS Deputy Scientific Director at CNRS, full member;
- Mr. Alain Schuhl, Chief Research Officer CNRS, substitute member;
- Mrs. Sylvie Retailleau, President of Paris-Saclay University, full member;

- Mr. Manuel Tunon de Lara, President of the University of Bordeaux and President of CPU, substitute member;
- Mr. Bruno Sportisse, President and CEO of INRIA and President of the Allistene Alliance, full member;
- Mrs. Bernadette Dorizzi, Director of Research and Doctoral Courses at Télécom SudParis, substitute member.

As qualified representatives from the business world:

- Mr. Bruno Maquart, President of Universcience;
- Mrs. Marie-Noëlle Semeria, Director of Research Development Group at Total;
- Mr. Philippe Tchong, former President and CEO of Sanofi-Aventis Group;
- Mrs. Catherine Truffert, President and CEO of IRIS Instruments.

The Vice-President of the National Strategic Council for Research:

- Mr Pascal Colombani.

As staff representatives:

- Mr. Jean-Michel Le Roux, Carnot Programme Manager at the Scientific Operations Division, full member;
- Mrs. Jannatul Mia, Project Manager in the Environment, Ecosystems, and Biological Resources Department, substitute member;
- Mrs. Sophie Grelat, Lawyer in the Legal Affairs Division, full member;
- Mrs. Delphine Callu, Scientific Project Manager in the Biology and Health Department, substitute member.

Attending the Board in an advisory capacity:

- The Chair of the Governing Board of the public institution BPI-Groupe or their representative;
- The French Secretary General for Investment, or their representative;
- The Deputy Director General for Administration and Budget;
- The Budget Controller;
- The Accountancy Officer

The Scientific Advisory Panel

The role of the ANR Scientific Advisory Panel is to assist the President and CEO in the strategic management of the Agency.

The President and CEO consults with the panel for:

- The preparation of ANR's Work Programme and the report on its implementation;
- The execution of work to evaluate research provision and analyse its impact;
- The creation or elimination of the Agency's scientific departments, their naming, and scope;
- The appointment of the Heads of Scientific Departments and the renewal of their duties.

The Scientific Advisory Panel may also be asked to express an opinion by the Agency's Governing Board or the President and CEO.

Its composition, the procedure for appointing its members, and its operating rules are set out by the Ministerial Order of 10 September 2015

Composition

Chaired by Pierre Corvol, President of the French Academy of Sciences and an honorary director of the Collège de France, the new Scientific Advisory Panel consists of:

Figures from outside ANR, including foreign contributors selected for their scientific and technical expertise in the Agency's areas of activity.

- Bruno Chaudret, Senior Researcher at the CNRS, member of the French Academy of Sciences;
- Yuko Harayama, former executive member of the Japanese Prime Minister's Science and Technology Council;
- Nathalie de Noblet-Ducoudré, Research Director at the CEA, member of the French Academy of Agriculture;

Figures from the business world, selected for their knowledge about the operation and restraints of national research, development, and innovation funding agencies:

- Valérie Mazza, Director of Scientific Affairs and Innovation at Limagrain Group, member of the French Academy of Technology;
- Roseann O'Reilly Runte, President and CEO of the Canada Foundation for Innovation;
- Pascal Viginier, President of the French Academy of Technology, Advisor to the Chairman of Orange.

Appendices

Review of 2021 calls for proposals

	PROJECTS SELECTED	SUCCESS RATE COMPARED TO THE NUMBER OF ELIGIBLE PROPOSALS	AVERAGE FUNDING PER PROJECT	AAPS BUDGET COMMITMENTS	SHARE OF COMMITMENT IN AAPS TOTAL
COMPONENT 1					
RESEARCH AND INNOVATION (AAPG)	1,779	22.7%	€ 430,5 k	€ 765,8 m	85.7%
PRC - COLLABORATIVE RESEARCH PROJECTS	1,008	22.9%	€ 502,7 k	€ 506,7 m	56.7%
PRCE - COLLABORATIVE RESEARCH PROJECTS INVOLVING ENTERPRISES	159	20.6%	€ 575,2 k	€ 91,5 m	10.2%
PRCI - INTERNATIONAL COLLABORATIVE RESEARCH PROJECTS	133	14.8%	€ 297,7 k	€ 39,6 m	4.4%
JCJC - YOUNG RESEARCHERS	479	26.9%	€ 267,2 k	€ 128,0 m	14.3%
COMPONENT 2					
SPECIFIC ACTIONS, EXCLUDING AAPG	145	27.3%	€ 100,7 k	€ 14,6 m	1.6%
CHALLENGE IA-BIODIV	2	66.7%	€ 492,9 k	€ 1 m	0.1%
RA-SIOMRI - RESEARCH-ACTION: INNOVATIVE AND OPERATIONAL SOLUTIONS IN INDUSTRIAL RISK MANAGEMENT IN URBAN AND DENSE ENVIRONMENTS	14	56.0%	€ 85,8 k	€ 1,2 m	0.1%
ACTION-LEBANON	13	31.0%	€ 92,7 k	€ 1,2 m	0.1%
COVID-19 RESEARCH-ACTION	41	18.2%	€ 119,5 k	€ 4,9 m	0.5%
COVID-19 RESILIENCE	45	30.6%	€ 76,1 k	€ 3,4 m	0.4%
HAUTS-DE-FRANCE RESILIENCE	15	45.5%	€ 114,8 k	€ 1,7 m	0.2%
CSTI-MCS - SCIENTIFIC, TECHNICAL, AND INDUSTRIAL CULTURE - SCIENTIFIC MEDICATION AND COMMUNICATION	15	26.8%	€ 77,4 k	€ 1,2 m	0.1%
COMPONENT 3					
BUILDING THE ERA AND FRANCE'S INTERNATIONAL ATTRACTIVENESS	271	21.6%	€ 285,7 k	€ 77,5 m	8.7%
SPECIFIC BILATERAL CALLS	36	15.9%	€ 276,9 k	€ 10,0 m	1.1%
EUROPEAN MULTILATERAL CALLS	161	19.2%	€ 270 k	€ 43,5 m	4.9%
OTHER MULTILATERAL CALLS	20	33.3%	€ 225 k	€ 4,5 m	0.5%
PARTNERSHIPS WITH AFRICAN HIGHER EDUCATION PROGRAMME	7	16.7%	€ 2 601,9 k	€ 18,2 m	2.0%
MRSEI - SETTING UP EUROPEAN OR INTERNATIONAL SCIENTIFIC NETWORKS	47	54.7%	€ 27,6 k	€ 1,3 m	0.1%
COMPONENT 4					
ECONOMIC IMPACT OF RESEARCH AND COMPETITIVENESS	96	33.1%	€ 368,0 k	€ 35,3 m	4.0%
ASTRID	45	36.6%	€ 335,1 k	€ 15,1 m	1.7%
LABCOM	35	24.8%	€ 362,9 k	€ 12,7 m	1.4%
INDUSTRIAL CHAIRS	7	53.8%	€ 612,8 k	€ 4,3 m	0.5%
ECOPHYTO MATURATION	9	69.2%	€ 361,8 k	€ 3,3 m	0.4%
TOTAL OF 4 COMPONENTS, EXCLUDING CARNOT	2,291	23.1%	€ 389,8 k	€ 893,2 M	100%

Review of 2021 actions

↳ Credit breakdown by beneficiary type 1/2

(values and percentages)

	OVERALL TOTAL	CNRS	INSERM	INRIA	IRD	INRAE	CEA	OTHER RESEARCH BODIES	SUBTOTAL RESEARCH BODIES	UNIVERSITIES	OTHER HIGHER EDUCATION INSTITUTIONS	HOSPITALS HEALTHCARE	OTHER PUBLIC SECTORS	PUBLIC SECTOR SUBTOTAL EXCLUDING RESEARCH BODIES	FONDATIONS AND ASSOCIATIONS	SMEs	MID-MARKET	LARGE COMPANIES	OTHER PRIVATE	SUBTOTAL PRIVATE
COMPONENT 1 RESEARCH AND INNOVATION (AAPG)	€ 765,776 k 66.8%	€ 260,842 k 34.1%	€ 78,446 k 10.2%	€ 8,199 k 1.1%	€ 5,992 k 0.8%	€ 29,312 k 3.8%	€ 22,358 k 2.9%	€ 23,839 k 3.1%	€ 428,989 k 56.0%	€ 186,077 k 24.3%	€ 67,841 k 8.9%	€ 8,787 k 1.1%	€ 1,344 k 0.2%	€ 264,050 k 34.5%	€ 49,620 k 6.5%	€ 14,759 k 1.9%	€ 3,244 k 0.4%	€ 4,191 k 0.5%	€ 924 k 0.1%	€ 72,738 k 9.5%
PRC - COLLABORATIVE RESEARCH PROJECTS	€ 506,717 k 66.2%	€ 184,351 k 36.4%	€ 60,390 k 11.9%	€ 4,164 k 0.8%	€ 4,221 k 0.8%	€ 22,165 k 4.4%	€ 15,629 k 3.1%	€ 14,136 k 2.8%	€ 305,056 k 60.2%	€ 116,160 k 22.9%	€ 38,737 k 7.6%	€ 6,612 k 1.3%	€ 760 k 0.1%	€ 162,269 k 32.0%	€ 36,944 k 7.3%	€ 1,153 k 0.2%	€ 482 k 0.1%	€ 45 k 0%	€ 769 k 0.2%	€ 39,393 k 7.8%
PRCE - COLLABORATIVE RESEARCH PROJECTS - ENTERPRISES	€ 91,458 k 11.9%	€ 17,961 k 19.6%	€ 5,507 k 6%	€ 1,583 k 1.7%	55 k 0.1%	€ 2,179 k 2.4%	€ 2,634 k 2.9%	€ 4,887 k 5.3%	€ 34,806 k 38.1%	€ 21,130 k 23.1%	€ 10,349 k 11.3%	€ 1,251 k 1.4%	€ 550 k 0.6%	€ 33,279 k 36.4%	€ 3,511 k 3.8%	€ 13,030 k 14.2%	€ 2,530 k 2.8%	€ 4,146 k 4.5%	€ 155 k 0.2%	€ 23,372 k 25.6%
PRCI - COLLABORATIVE RESEARCH PROJECTS - INTERNATIONAL	€ 39,595 k 5.2%	€ 15,305 k 38.7%	€ 1,939 k 4.9%	€ 283 k 0.7%	€ 262 k 0.7%	€ 1,902 k 4.8%	€ 2,615 k 6.6%	€ 718 k 1.8%	€ 23,023 k 58.1%	€ 9,639 k 24.3%	€ 3,419 k 8.6%		€ 34 k 0.1%	€ 13,092 k 33.1%	€ 2,873 k 7.3%	€ 375 k 0.9%	€ 232 k 0.6%	-	-	€ 3,480 k 8.8%
JCJC - YOUNG RESEARCHERS	€ 128,006 k 16.7%	€ 43,225 k 33.8%	€ 10,610 k 8.3%	€ 2,171 k 1.7%	€ 1,454 k 1.1%	€ 3,066 k 2.4%	€ 1,480 k 1.2%	€ 4,098 k 3.2%	€ 66,103 k 51.6%	39,148 k 30.6%	€ 15,337 k 12%	€ 925 k 0.7%		€ 55,410 k 43.3%	€ 6,292 k 4.9%	€ 201 k 0.2%	-	-	-	€ 6,492 k 5.1%
COMPONENT 2 SPECIFIC ACTIONS, EXCLUDING AAPG	€ 38,160 k 3.3%	€ 2,405 k 6.3%	€ 1,362 k 3.6%	€ 184 k 0.5%	€ 409 k 1.1%	€ 315 k 0.8%	€ 180 k 0.5%	€ 1,221 k 3.2%	€ 6,075 k 15.9%	€ 4,149 k 10.9%	€ 1,130 k 3%	€ 1,101 k 2.9%	€ 95 k 0.2%	€ 6,475 k 17.0%	€ 2,076 k 5.4%	€ 524 k 1.4%			150 k 0.4%	€ 2,750 k 7.2%
AI CHALLENGE	€ 986 k 2.6%	€ 331 k 33.6%	-	-	-	-	-	-	€ 331 k 33.6%	€ 347 k 35.2%	€ 307 k 31.2%	-	-	€ 654 k 66.4%	-	-	-	-	-	-
RA-SIOMBRI - RESEARCH-ACTION: INNOVATIVE AND OPERATIONAL SOLUTIONS IN INDUSTRIAL RISK MANAGEMENT IN URBAN AND DENSE ENVIRONMENTS	€ 1,202 k 3.1%	€ 35 k 2.9%	-	-	-	-	-	€ 232 k 19.3%	€ 267 k 22.2%	€ 422 k 35.1%	€ 122 k 10.2%	-	-	€ 544 k 45.3%	€ 82 k 6.8%	€ 309 k 25.7%	-	-	-	€ 391 k 32.5%
ACTION-LEBANON	€ 1,204 k 3.2%	€ 285 k 23.7%	€ 95 k 7.9%	-	€ 95 k 7.9%	-	-	-	€ 475 k 39.4%	€ 539 k 44.8%	-	-	€ 95 k 7.9%	€ 634 k 52.7%	€ 95 k 7.9%	-	-	-	-	€ 95 k 7.9%
COVID-19 RESEARCH-ACTION	€ 4,901 k 12.8%	€ 508 k 10.4%	€ 683 k 13.9%	-	-	€ 156 k 3.2%	€ 100 k 2%	€ 209 k 4.3%	€ 1,656 k 33.8%	€ 818 k 16.7%	€ 394 k 8%	€ 589 k 12%	-	€ 1,801 k 36.8%	€ 1,157 k 23.6%	€ 137 k 2.8%	-	-	€ 150 k 3.1%	€ 1,444 k 29.5%
COVID-19 RESILIENCE	€ 3,424 k 9%	€ 473 k 13.8%	€ 554 k 16.2%	-	€ 234 k 6.8%	€ 80 k 2.3%	€ 80 k 2.3%	€ 80 k 2.3%	€ 1,501 k 43.8%	€ 851 k 24.9%	-	€ 367 k 10.7%	-	€ 1,218 k 35.6%	€ 627 k 18.3%	€ 78 k 2.3%	-	-	-	€ 705 k 20.6%
HAUTS-DE-FRANCE RESILIENCE	€ 1,722 k 4.5%	€ 376 k 21.8%	€ 30 k 1.7%	€ 184 k 10.7%	-	-	-	-	€ 589 k 34.2%	€ 807 k 46.9%	€ 67 k 3.9%	€ 144 k 8.4%	-	€ 1,018 k 59.1%	€ 115 k 6.7%	-	-	-	-	€ 115 k 6.7%
CSTI-MCS - SCIENTIFIC, TECHNICAL, AND INDUSTRIAL CULTURE-SCIENTIFIC MEDICATION AND COMMUNICATION	€ 1,161 k 3%	€ 397 k 34.2%	-	-	€ 80 k 6.9%	€ 79 k 6.8%	-	-	€ 557 k 47.9%	€ 365 k 31.4%	€ 240 k 20.6%	-	-	€ 605 k 52.1%	-	-	-	-	-	-
SAPS CSTI-AAPG 18/19*	€ 4,660 k 12.2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNIOR PROFESSORSHIP CHAIR*	€ 18,200 k 47.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIFRE AI PLAN (ANRT)	€ 700 k 1.8%	-	-	-	-	-	-	€ 700 k 100%	€ 700 k 100%	-	-	-	-	-	-	-	-	-	-	-

* The breakdown by beneficiary type has not been finalised

Review of 2021 actions

↳ Credit breakdown by beneficiary type 2/2

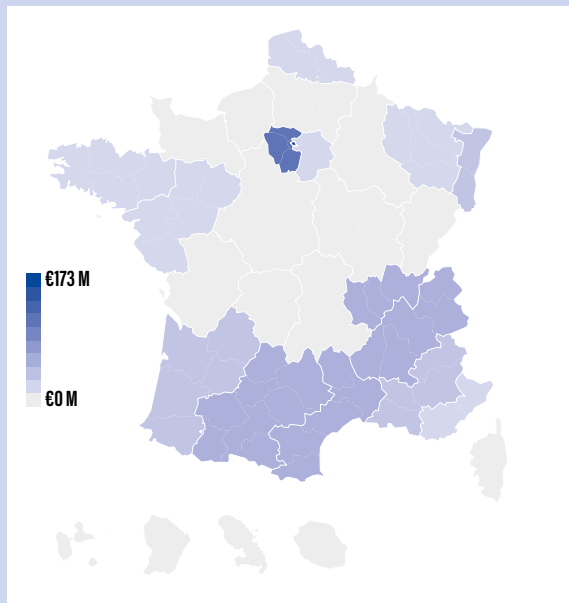
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COMPONENT 3 BUILDING THE ARR AND FRANCE'S INTERNATIONAL ATTRACTIVENESS	€ 79,887 k 7%	€ 10,888 k 13.6%	€ 3,521 k 4.4%	€ 1,889 k 2.4%	€ 1,925 k 2.4%	€ 5,581 k 7%	€ 1,380 k 1.7%	€ 5,567 k 7%	€ 30,752 k 38.5%	€ 25,684 k 32.2%	€ 10,400 k 13%	€ 3,137 k 3.9%	€ 52 k 0.1%	€ 39,274 k 49.2%	€ 5,265 k 6.6%	€ 3,824 k 4.8%	€ 294 k 0.4%	€ 447 k 0.6%	€ 31 k 0%	€ 9,861 k 12.3%
SPECIFIC BILATERAL CALLS	€ 10,569 k 13.2%	€ 1,504 k 14.2%	€ 713 k 6.7%	€ 792 k 7.5%	-	€ 207 k 2%	€ 189 k 1.8%	€ 240	€ 3,645 34.5%	€ 3,314 31.4%	€ 1,430 13.5%	-	-	€ 4,743 44.9%	€ 751 7.1%	€ 965 9.1%	€ 62 0.6%	€ 403 3.8%	-	€ 2,180 20.6%
EUROPEAN MULTILATERAL CALLS	€ 43,981 k 55.1%	€ 6,426 k 14.6%	€ 2,672 k 6.1%	€ 1,020 k 2.3%	€ 1,182 k 2.7%	€ 5,040 k 11.5%	€ 1,110 k 2.5%	€ 4,655 k 10.6%	€ 22,105 k 50.3%	€ 8,186 k 18.6%	€ 3,261 k 7.4%	€ 3,108 k 7.1%	€ 52 k 0.1%	€ 14,608 k 33.2%	€ 4,300 k 9.8%	€ 2,706 k 6.2%	€ 202 k 0.5%	€ 44 k 0.1%	€ 16 k 0%	€ 7,268 k 16.5%
OTHER MULTILATERAL CALLS	€ 4,499 k 5.6%	€ 2,182 k 48.5%	-	-	€ 694 k 15.4%	€ 215 k 4.8%	-	€ 565	€ 3,656 k 81.3%	€ 688 k 15.3%	-	-	-	€ 688 k 15.3%	-	€ 124 k 2.8%	€ 30 k 0.7%	-	-	€ 154 k 3.4%
PARTNERSHIPS WITH AFRICAN HIGHER EDUCATION PROGRAMME	€ 18,243 k 22.8%	-	-	-	-	-	-	-	-	€ 13,063 k 71.6%	€ 5,180 k 28.4%	-	-	€ 18,243 k 100%	-	-	-	-	-	-
MRSEI - SETTING UP A EUROPEAN OR INTERNATIONAL SCIENTIFIC NETWORKS	€ 1,295 k 1.6%	€ 88 k 6.8%	€ 59 k 4.6%	-	€ 49 k 3.8%	€ 119 k 9.2%	€ 81 k 6.2%	€ 107 k 8.3%	€ 504 k 38.9%	€ 286 k 22.1%	€ 218 k 16.8%	€ 29 k 2.2%	-	€ 533 k 41.2%	€ 214 k 16.6%	€ 29 k 2.2%	-	-	€ 15 k 1.2%	€ 258 k 19.9%
ERC PROGRAMME	€ 1,300 k 1.6%	€ 687 k 52.9%	€ 78 k 6%	€ 77 k 5.9%	-	-	-	-	€ 842 k 64.8%	€ 147 k 11.3%	€ 311 k 23.9%	-	-	€ 458 k 35.2%	-	-	-	-	-	-
COMPONENT 4 ECONOMIC IMPACT OF RESEARCH AND COMPETITIVENESS	€ 117,328 k 10.2%	€ 11,601 k 9.9%	€ 1,236 k 1.1%	€ 1,915 k 1.6%	€ 363 k 0.3%	€ 10,986 k 9.4%	€ 15,199 k 13%	€ 5,583 k 4.8%	€ 46,884 k 40%	€ 12,819 k 10.9%	€ 18,398 k 15.7%	€ 4,353 k 3.7%	€ 1,262 k 1.1%	€ 36,833 k 31.4%	€ 20,191 k 17.2%	€ 8,558 k 7.3%	€ 266 k 0.2%	€ 1,303 k 1.1%	€ 2,875 k 2.5%	€ 33,192 k 28.3%
ASTRID PROGRAMME	€ 15,081 k 12.9%	€ 3,021 k 20%	€ 147 k 1%	€ 205 k 1.4%	-	-	€ 179 k 1.2%	€ 583 k 3.9%	€ 4,136 k 27.4%	€ 3,963 k 26.3%	€ 2,046 k 13.6%	€ 273 k 1.8%	€ 102 k 0.7%	€ 6,385 k 42.3%	€ 731 k 4.8%	€ 2,186 k 14.5%	€ 168 k 1.1%	€ 1,115 k 7.4%	-	4,199 k 27.8%
LABCOM	€ 12,702 k 10.8%	€ 2,178 k 17.1%	€ 1,089 k 8.6%	-	€ 363 k 2.9%	€ 363 k 2.9%	-	-	€ 3,993 k 31.4%	€ 5,443 k 42.9%	€ 2,903 k 22.9%	-	-	€ 8,346 k 65.7%	-	-	-	-	-	-
INDUSTRIAL CHAIRS	€ 4,290 k 3.7%	€ 2,076 k 48.4%	-	-	-	€ 630 k 14.7%	-	-	€ 2,706 k 63.1%	€ 540 k 12.6%	€ 1,044 k 24.3%	-	-	€ 1,584 k 36.9%	-	-	-	-	-	-
ECOPHYTO MATURATION	€ 3,256 k 2.8%	€ 466 k 14.3%	-	-	-	€ 1,263 k 38.8%	-	-	€ 1,729 k 53.1%	€ 214 k 6.6%	€ 164 k 5%	-	-	€ 378 k 11.6%	-	€ 712 k 21.9%	€ 98 k 3%	€ 188 k 5.8%	€ 455 k 14.0%	€ 1,452 k 44.6%
CARNOT INSTITUTE	€ 82,000 k 69.9%	€ 3,860 k 4.7%	-	€ 1,710 k 2.1%	-	€ 8,730 k 10.6%	€ 15,020 k 18.3%	€ 5,000 k 6.1%	€ 34,320 k 41.9%	€ 2,660 k 3.2%	€ 12,240 k 14.9%	€ 4,080 k 5%	€ 1,160 k 1.4%	€ 20,140 k 24.6%	€ 19,460 k 23.7%	€ 5,660 k 6.9%	-	-	€ 2,420 k 3.0%	€ 27,540 k 33.6%
OTHER FUNDING EXCLUDING THE 4 COMPONENTS	€ 145,485 k 12.7%	€ 13,429 k 9.2%	€ 4,218 k 2.9%	€ 1,447 k 1%	€ 760 k 0.5%	€ 3,437 k 2.4%	€ 5,277 k 3.6%	€ 1,810 k 1.2%	€ 30,378 k 20.9%	€ 35,568 k 24.4%	€ 11,028 k 8%	€ 1,000 k 1%	€ 62,241 k 42.8%	€ 109,837 k 75.5%	€ 5,067 k 3.5%	€ 0	€ 4 k	€ 0	€ 199 k 0.1%	€ 5,271 k 3.6%
BASIC TECHNOLOGICAL RESEARCH (RTB)	€ 3,800 k 2.6%	€ 2,052 k 54%	-	-	-	-	€ 1,748 k 46%	-	€ 3,800 k 100%	-	-	-	-	-	-	-	-	-	-	-
INCA	€ 62,000 k 42.6%	-	-	-	-	-	-	-	-	-	-	-	€ 62,000 k 100%	€ 62,000 k 100%	-	-	-	-	-	-
PRECIPUT	€ 79,685 k 54.8%	€ 11,377 k 14.3%	€ 4,218 k 5.3%	€ 1,447 k 1.8%	€ 760 k 1%	€ 3,437 k 4.3%	€ 3,529 k 4.4%	€ 1,810 k 2.3%	€ 26,578 k 33.4%	35,568 k 44.6%	€ 11,028 k 13.8%	€ 1,000 k 1.3%	€ 241 k 0.3%	€ 47,837 k 60.0%	€ 5,067 k 6.4%	-	€ 4 k 0.0%	-	€ 199 k 0.2%	€ 5,271 k 6.6%
OVERALL TOTAL	€ 1,146,637 k	€ 299,165 k	€ 88,783 k	€ 13,633 k	€ 9,450 k	€ 49,631 k	€ 44,395 k	€ 38,020 k	€ 543,078 k	€ 264,298 k	€ 108,798 k	€ 18,378 k	€ 64,995 k	€ 456,468 k	€ 82,219 k	€ 25,773 k	€ 3,808 k	€ 5,940 k	€ 4,179 k	€ 121,919 k

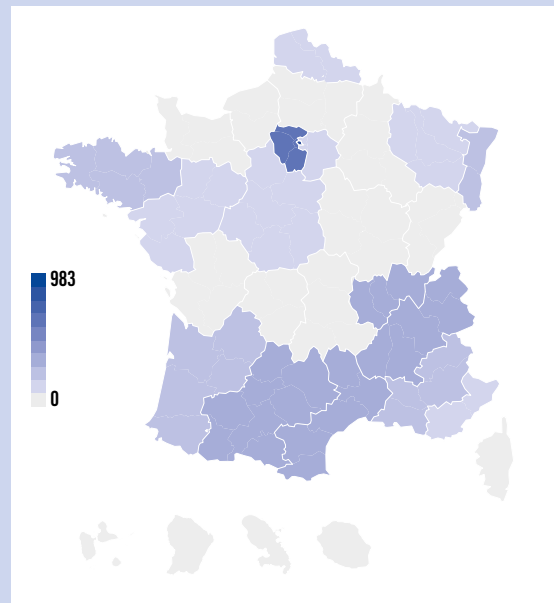
* The breakdown by beneficiary type has not been finalised

Call for proposals credit breakdown by education authority

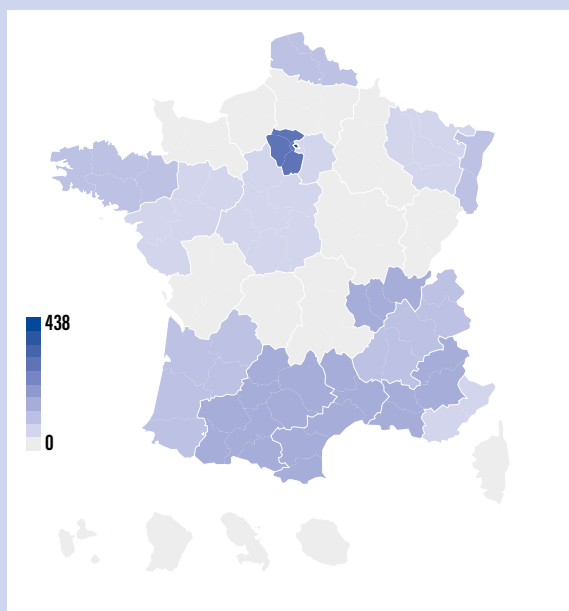
Partner funding by education authority (4 components)



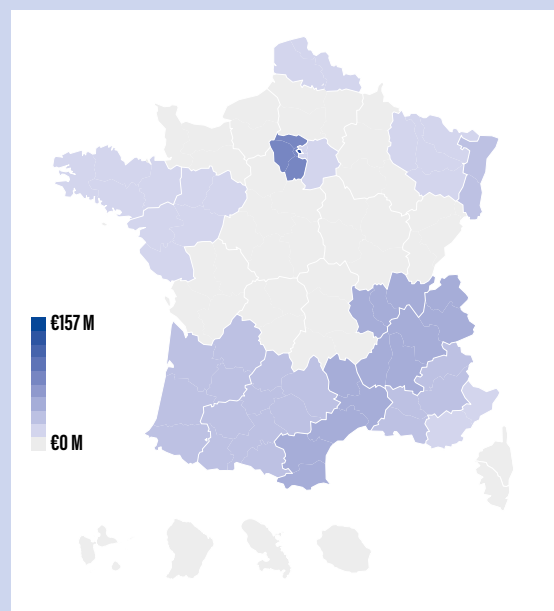
Number of partners per education authority (4 components)



Number of coordinators per education authority (4 components)



Partner funding by education authority (AAPG)



Investments for the Future - France 2030



PIA - France 2030 financial elements*

TOTAL AMOUNT AUTHORISED	€18,470,494,576
TOTAL AMOUNT UNDER CONTRACT	€ 17,566,833,850
TOTAL AMOUNT DISBURSED	€ 14,379,597,237

Excluding Campus and Saclay

* Including non-consumable grants for fully certified initiatives.

Breakdown of project funding by region as of 31/12/2021

MAIN REGION OF THE PROJECT	NUMBER OF PROJECTS	TOTAL AUTHORISED*	TOTAL UNDER CONTRACT	DISBURSED	TO BE DISBURSED
AUVERGNE-RHÔNE-ALPES	151	€ 2,641,801,674	€ 2,572,022,030	€ 2,037,223,479	€ 604,578,194
BOURGOGNE-FRANCHE-COMTÉ	19	€ 220,718,012	€ 190,597,296	€ 136,727,026	€ 83,990,986
BRETAGNE	37	€ 499,213,262	€ 466,708,769	€ 303,248,953	€ 195,964,309
CENTRE-VAL DE LOIRE	12	€ 78,116,581	€ 71,907,832	€ 51,724,807	€ 26,391,774
DOM/TOM	2	€ 8,000,000	€ 6,200,000	€ 1,620,000	€ 6,380,000
GRAND EST	62	€ 1,926,386,009	€ 1,866,096,545	€ 1,677,241,447	€ 249,144,562
HAUTS DE FRANCE	46	€ 526,568,334	€ 500,162,075	€ 379,158,011	€ 147,410,323
ÎLE-DE-FRANCE	388	€ 7,668,622,980	€ 7,242,050,357	€ 5,949,655,534	€ 1,718,967,446
NORMANDIE	14	€ 104,143,856	€ 104,115,893	€ 75,122,382	€ 29,021,473
NOUVELLE AQUITAINE	67	€ 1,371,009,945	€ 1,256,293,482	€ 1,099,236,360	€ 271,773,585
OCCITANIE	87	€ 1,080,164,995	€ 1,022,758,798	€ 729,333,197	€ 350,831,798
PAYS DE LA LOIRE	21	€ 297,891,246	€ 310,178,692	€ 179,219,934	€ 118,671,312
PROVENCE-ALPES-CÔTE D'AZUR	64	€ 2,015,328,527	€ 1,931,812,927	€ 1,736,464,411	€ 278,864,116
TOTAL	970	18 437 965 421	17 540 904 695	14 355 975 541	4 081 989 880

Excluding Campus and Saclay / excluding CVT,

* Including non-consumable grants for fully certified initiatives. **Including Labex and IDEFI projects within the scope of the projects concerned

Breakdown of project funding by action as of 31/12/2021

ACTIONS	NUMBER OF PROJECTS	TOTAL AUTHORISED*	TOTAL UNDER CONTRACT	DISBURSED	TO BE DISBURSED
ANTIBIOTIC RESISTANCE: UNDERSTAND, INNOVATE, ACT	11	€ 24,982,705	€ 24,982,705	€ 3,331,317	€ 21,651,388
BIOINFORMATICS	12	€ 16,716,143	€ 16,716,142	€ 16,719,880	€ -3,737
BIOTECHNOLOGY AND BIORESOURCES	13	€ 84,514,777	€ 84,480,197	€ 79,218,395	€ 5,296,382
COHORTS	15	€ 100,209,123	€ 94,209,122	€ 71,843,612	€ 28,365,511
THEMATIC DEVELOPMENT CONSORTIA	6	€ 32,529,155	€ 25,929,155	€ 24,450,000	€ 8,079,155
ALTERNATIVE APPROACHES TO CULTIVATION AND PROTECTION	10	€ 26,972,869	€ 26,972,869	€ 3,117,164	€ 23,855,705
DEMONSTRATORS	4	€ 90,693,735	€ 90,693,735	€ 74,693,883	€ 15,999,851
DIGITAL DEMONSTRATORS IN HIGHER EDUCATION	17	€ 100,000,000	€ 10,000,000	€ 8,400,000	€ 91,600,000
LIVE DEMONSTRATION, INITIATION AND FIRST ENTRY ON THE MARKET	1	€ 30,000,000	€ 0	€ 0	€ 30,000,000
DEVELOPMENT OF EXPERIMENTAL DIGITAL UNIVERSITIES	5	€ 8,000,000	€ 8,000,000	€ 7,319,671	€ 680,329
GRADUATE SCHOOLS OF RESEARCH	37	€ 292,675,000	€ 292,675,000	€ 70,527,030	€ 222,147,970
EQUIPMENT OF EXCELLENCE	93	€ 591,873,426	€ 591,393,424	€ 571,320,239	€ 20,553,187
EQUIPMENT OF EXCELLENCE 2	5	€ 177,000,000	€ 177,000,000	€ 122,516,448	€ 54,483,552
STRUCTURING EQUIPMENT FOR RESEARCH	53	€ 540,103,315	€ 476,940,525	€ 49,687,171	€ 490,416,144
EXCELLENCE UNDER ALL ITS FORMS	15	€ 292,400,000	€ 0	€ 0	€ 292,400,000
ADDITIONAL EXPERIMENTATION BY SATTs	7	€ 23,250,000	€ 22,500,000	€ 15,100,000	€ 8,150,000
HYBRIDISATION IN HIGHER EDUCATION	15	€ 21,709,000	€ 21,709,000	€ 15,500,700	€ 6,208,300
IDEX / I-SITE**	75	€ 2,866,921,267	€ 2,859,090,321	€ 2,616,158,314	€ 250,762,953
INFRASTRUCTURE	23	€ 564,069,892	€ 564,059,250	€ 486,049,811	€ 78,020,081
INITIATIVES OF EXCELLENCE**	95	€ 6,422,424,400	€ 6,343,150,454	€ 6,340,961,443	€ 81,462,957
INITIATIVES OF EXCELLENCE IN DIGITAL EDUCATION	12	€ 12,290,000	€ 12,290,000	€ 11,784,263	€ 505,737
INITIATIVES OF EXCELLENCE IN INNOVATIVE TRAINING	23	€ 119,986,104	€ 117,786,104	€ 89,483,128	€ 30,502,976
CARNOT INSTITUTES	55	€ 136,216,771	€ 136,216,771	€ 121,013,738	€ 15,203,033
CONVERGENCE INSTITUTES	10	€ 103,136,000	€ 103,136,000	€ 52,512,360	€ 50,623,640
TECHNOLOGICAL RESEARCH INSTITUTES	8	€ 1,124,604,227	€ 1,124,604,227	€ 752,581,458	€ 372,022,769
INSTITUTES OF EXCELLENCE IN LOW-CARBON ENERGY	13	€ 384,732,225	€ 383,805,577	€ 291,384,898	€ 93,347,327
RESEARCH HOSPITALS	6	€ 423,329,166	€ 423,329,163	€ 353,134,163	€ 70,195,003
RESEARCH HOSPITALS 2	1	€ 50,000,000	€ 50,000,000	€ 15,000,000	€ 35,000,000

ACTIONS	NUMBER OF PROJECTS	TOTAL AUTHORISED*	TOTAL UNDER CONTRACT	DISBURSED	TO BE DISBURSED
RESEARCH HOSPITALS B	6	€ 35,000,000	€ 35,000,000	€ 34,627,292	€ 372,708
RESEARCH HOSPITALS B 2	3	€ 15,000,000	€ 15,000,000	€ 8,100,000	€ 6,900,000
INTERDISCIPLINARY INSTITUTES OF ARTIFICIAL INTELLIGENCE	4	€ 88,000,000	€ 74,500,000	€ 18,900,000	€ 69,100,000
INTEGRATION AND DEVELOPMENT OF IDEX AND ISITE	16	€ 207,700,000	€ 118,100,000	€ 13,083,750	€ 194,616,250
BOARDING SCHOOLS OF EXCELLENCE AND EQUALITY OF OPPORTUNITY	1	€ 900,000	€ 900,000	€ 900,000	€ 0
LABORATORIES OF EXCELLENCE	55	€ 764,123,842	€ 764,123,842	€ 410,564,165	€ 353,559,677
MAKE OUR PLANET GREAT AGAIN	41	€ 26,889,303	€ 24,641,203	€ 16,860,516	€ 10,074,220
NANOBIOTECHNOLOGY	8	€ 17,205,746	€ 17,171,029	€ 17,171,028	€ 171,512
NEW UNIVERSITY CURRICULA	36	€ 325,900,000	€ 325,897,569	€ 100,777,663	€ 225,122,337
TOMORROW'S NUCLEAR	1	€ 599,000,000	€ 599,000,000	€ 364,900,000	€ 234,100,000
NUWARD	1	€ 50,000,000	€ 0	€ 0	€ 50,000,000
HOSPITAL UNIVERSITY ONCOLOGY RESEARCH CLUSTER (PHUC)	2	€ 20,000,000	€ 20,000,000	€ 19,813,478	€ 186,522
UNIVERSITY HOSPITAL HEALTH RESEARCH	56	€ 448,966,096	€ 302,585,644	€ 195,298,320	€ 253,667,776
TECHNOLOGY TRANSFER ACCELERATION STRATEGIES	14	€ 810,305,000	€ 810,305,000	€ 797,146,365	€ 15,908,217
TRAINING SUPPORT WITHIN THE FRAMEWORK OF THE NATIONAL QUANTUM STRATEGY	3	€ 3,099,000	€ 0	€ 0	€ 3,099,000
VERY HIGH-PERFORMANCE SPORT	12	€ 18,275,549	€ 12,459,749	€ 6,337,302	€ 11,938,247
STRUCTURING OF RESEARCH-BASED TRAINING IN INITIATIVES OF EXCELLENCE	19	€ 280,500,000	€ 267,500,000	€ 33,450,000	€ 247,050,000
NUCLEAR SAFETY	22	€ 67,726,441	€ 67,726,261	€ 60,006,432	€ 7,720,009
EUROPEAN UNIVERSITIES	36	€ 30,564,299	€ 30,253,811	€ 17,851,839	€ 12,712,460
TOTAL	976	€ 18,470,494,576	€ 17,566,833,850	€ 14,379,597,237	€ 4,093,829,147

Excluding Campus and Saclay

* Including non-consumable grants for fully certified initiatives.

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