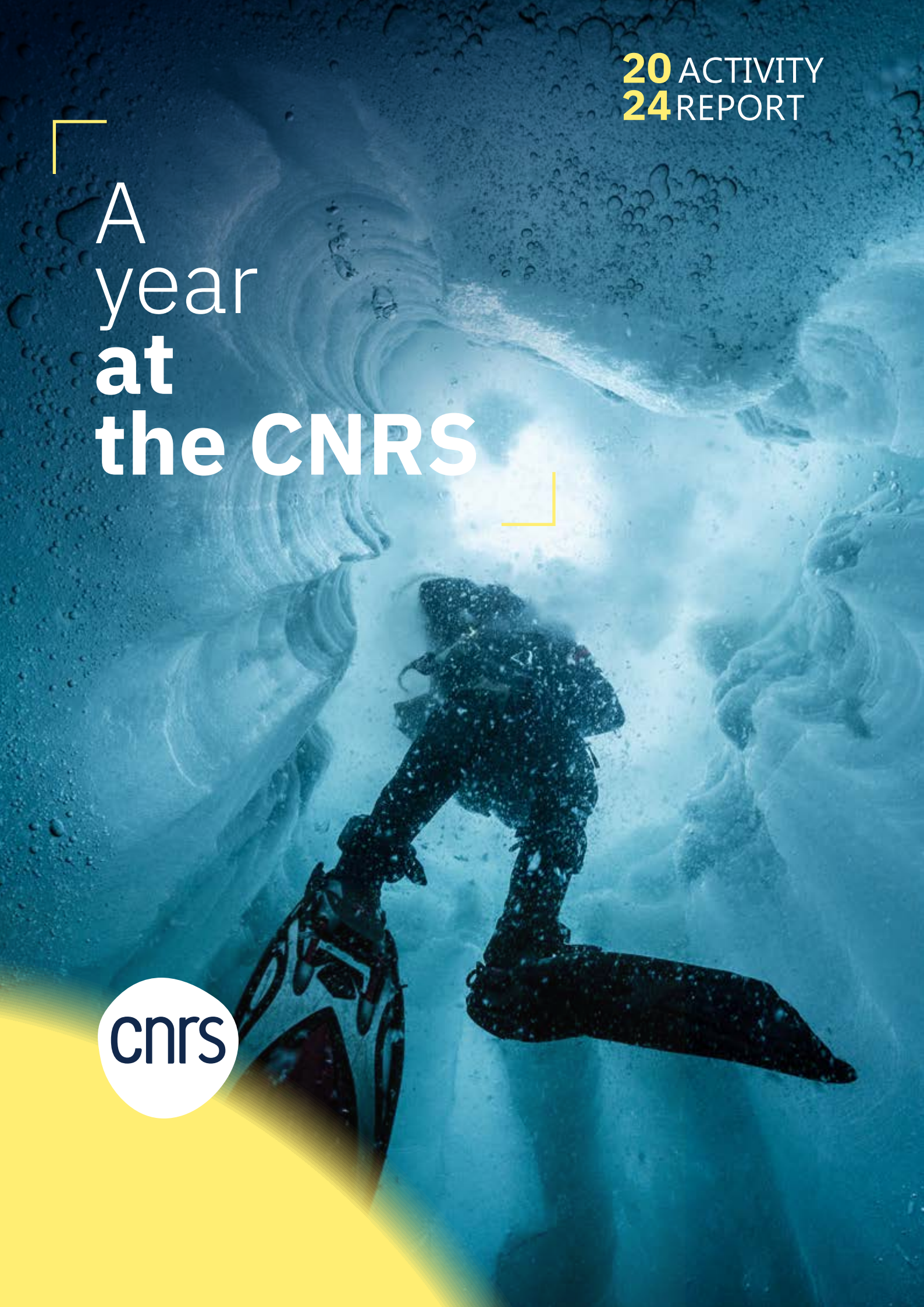
20 ACTIVITY
24 REPORT

A year **at the CNRS**



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Cover photo :
A diver comes up through a hole dug in the ice at the bottom of the Young Sund fjord in Greenland. This picture was taken for the PRIVARC project aimed at quantifying anthropogenic effects on Arctic benthic ecosystems and more specifically the renewal of bivalve populations by studying delays in their metamorphosis

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A year at the CNRS

2024 ACTIVITY REPORT

For more information, please click on the news items to find the full corresponding articles.

Researchers measuring soil temperature and humidity for the Warm project, a study of climate change's effects on alpine grasslands. Col du Lautaret, French Alps.

" Strengthening the CNRS's role and influence so it can take action to respond to major global challenges."

Antoine Petit,
Chairman and CEO

© Frédérique PLAS / CNRS Images

The CNRS invited around 1100 of its unit directors to a major convention at the end of the year. Why was it important to take stock at that point?

Meetings and exchanges with our unit directors are always key moments in the life of the CNRS and its Institutes. It's obviously exceptional to be able to bring over a thousand of them together on the same day and in the same place - if not actually a real event in itself. This year was the second convention of this kind, the aims being to share the CNRS's strategic roadmap and present the organisation's main priorities in the framework of the new Objectives, Means and Performance Contract (COMP). In 2024, the CNRS's COMP for the 2024-2028 period was finalised with the French government, defining our scientific and strategic priorities and putting the attractiveness of research careers at the forefront. In this way, it highlights the ambitious human resource policy aimed at attracting and retaining the best talent. The COMP also identifies six major transversal challenges - the brain, the materials of the future, life in the Universe, unlimited instrumentation and generative AI for science and societies in transition. It also stresses the CNRS's commitment to open science, innovation and gender equality and outlines the CNRS's Overall Sustainable Development and Social Responsibility Plan.

The discussions at this major convention focused on ways to strengthen the CNRS, both in its role as the flagship of French academic research and in its capacity to act in favour of our country in terms of recruitment, the coordination of research forces and the attractiveness of scientific careers, success in European projects and calls for proposals, and the research-innovation continuum. This day was in fact constructed around these pillars that are the hallmark of the CNRS. It was also the right time to reiterate the fact that the CNRS needs to express its priorities and scientific strategy to be able to carry out its missions and ensure the organisation's added value as a national research operator.

In a period of budgetary constraints, which I obviously very much regret, and an international context that is both ultra-competitive and worrying as regards the recognition of science in society, a strong scientific policy is essential to maintain our research capabilities and continue to respond to societal challenges.

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The CNRS has multiplied initiatives to structure its European and global presence and drive strategic collaborations. How do these new bases in places ranging from Nairobi to São Paulo via Sherbrooke bolster the role the organisation plays in international scientific dynamics and the production of global knowledge?

This year, the CNRS has once again reinforced its international presence to consolidate its role as a key global science stakeholder. The opening of a CNRS office in Nairobi (Kenya) marks the organisation's strategic commitment to East Africa as set out in the CNRS's roadmap for Africa and supports increasing research investment in a continent with tremendous scientific potential.

In South America, moving the CNRS office to São Paulo (Brazil) and strengthening the partnership with the Fapesp[1] both help consolidate cooperation in this region. These new developments stem from a desire to adapt to new global dynamics and strengthen long-term cooperation with emerging scientific powers that will play key roles in tomorrow's global scientific landscape. The inauguration of an International Research Centre (IRC) in Sherbrooke (Canada) underlines our commitment to North America, particularly in the fields of innovative and sustainable technologies.

The ambition driving the CNRS's international policy echoes its European ambitions. The CNRS has been the leading French beneficiary of European framework programmes for the last 40 years and, as such, has expressed its position and expectations regarding the upcoming European framework programme, FP10. The organisation has called for Europe to be more ambitious in science by focusing on basic research, attractiveness for talent and support for projects at all levels of the TRL[2]. scale. In the current complex and turbulent global context, defending the freedom of research, our country's scientific ambition and European sovereignty are goals we must firmly strive towards.

[1] The Fapesp is the State of São Paulo's public research funding agency, providing funding to support scientific and technological research in public and private institutions.

[2] Technology Readiness Level

The year was also marked by new initiatives in the framework of the France 2030 investment plan with the CNRS's 'Research at Risk' programme and the call for expressions of interest in the humanities and social sciences (HSS)...

2024 did indeed mark a new stage in the France 2030 investment plan aimed at positioning France as a major stakeholder in the science and technology of tomorrow. So, following on from the roll-out of the Priority Research Programme and Equipment (PEPR) projects in 2022-2023, new schemes have been set up to bolster our capacity to respond to scientific and societal challenges.

The 'Research at Risk' programme has a budget of €40 million for the CNRS, enabling the selection of 12 large-scale scientific projects. These are bold multidisciplinary projects capable of conducting basic research at a very early stage and generating conceptual or technological breakthroughs of strategic importance for France in the international competition of the coming decades. This year also saw the launch of the HSS call for expressions of interest that aims to bolster the position of the humanities and social sciences and drive the emergence of HSS research hubs to enhance French researchers' international visibility.

Thanks to these two initiatives in particular, the France 2030 plan has enabled the CNRS to strengthen its capacity to anticipate and respond to major contemporary challenges. In the same spirit, this year the CNRS set up the 'Climate, Biodiversity and Sustainable Societies' programme agency which the State asked it to take responsibility for.

For a year now, this agency has been working to federate and coordinate stakeholders, propose new research programmes and drive dialogue within its broad field of expertise between research, public decision-makers and civil society. The past year marked an essential step in this process with the involvement of 35 partners from academia, industry, local authorities, and environmental and scientific culture associations. On this basis, the agency has put forward a new research programme dedicated to deepening our knowledge of terrestrial biodiversity.

© CNRS

APRIL

The CNRS and the University of Sherbrooke in Quebec officially launch an International Research Centre entirely dedicated to innovation. This IRC is the sixth to be launched by the CNRS.

© University of Sherbrooke

JULY

The CNRS rallies to support the upcoming European framework programme for research and innovation, FP10, by advocating for its budget to be doubled and for enhanced support for basic research.

The aim - to strengthen Europe's attractiveness and scientific sovereignty.

OCTOBER

The CNRS's 'Research at Risk' programme provides funding for 12 ambitious scientific projects. The programme's €40 million budget supports breakthrough research with major technological and societal potential.

© CNRS

© CNRS

NOVEMBER

The CNRS launches a major public consultation to find out what the French expect from science and explore the challenges of our era.

DECEMBER

The CNRS invites its unit directors to a convention to discuss the organisation's roadmap, future scientific challenges and strategic priorities before the organisation's new COMP is signed with the French government.

© CNRS

DECEMBER

The CNRS's new Objectives, Means and Performance Contract (COMP) for 2024-2028 is approved.
This five-year contract sets out a roadmap for the organisation so the CNRS can carry on promoting the influence of French science worldwide. In this COMP, the CNRS affirms its scientific ambitions and priorities for the coming five years.

2024 in figures

HUMAN RESOURCES

Over
34,700
staff members,

including
29,400
scientists

Over
200
different professions providing direct support for research

Among the
254
researchers recruited in 2024

43%
were women

and over 34%
were from other countries

BUDGET

Over
4
billion euros for our budget (wage bill included)

including over 1
billion euros of CNRS-generated income

EUROPE

1st
beneficiary institution of the European framework programme Horizon Europe

Nearly
50%
of the winning European Research Council (ERC) projects from France in 2024 are led by CNRS researchers

INTERNATIONAL

Over
80
international laboratories, including 12 created in 2024,

located in nearly
50
countries

6
International Research Centres

11
representative offices in other countries

RESEARCH

10
thematic Institutes

Over
1100
laboratories under CNRS supervisory authority (research or support units)

PARTNERSHIPS

Over
120,000
staff members working in laboratories under CNRS supervisory authority

2/3
of CNRS staff members work on

10
higher education and research sites that host

50%
of the research or support units

PUBLICATIONS

Over
55,000
publications from laboratories under CNRS supervisory authority including nearly

65%
co-signed with a foreign laboratory

Nearly
95%
of publications by CNRS researchers are in open access

INNOVATION

100
start-ups deriving from laboratories under CNRS supervisory authority created per year

Nearly
300
active CNRS/company joint laboratories

Over
7000
patent families in the CNRS portfolio

1st
public co-filer of patents with companies

Institutional and international highlights

JANUARY

The CNRS unsubscribes from the Scopus publication database, affirming its wish to give priority to tools that are aligned with its values of openness and accessibility. This decision is part of a broader strategy in favour of more transparent and fairer science.

FEBRUARY

The *Maison française d'Oxford* (MFO) sets up a new foundation under the auspices of the CNRS Foundation. This new structure will enable donations and bequests to be received to benefit the MFO which will bolster its role in promoting French research and culture in the United Kingdom and foster the development of Franco-British collaboration initiatives.

The CNRS launches its 2024-2026 action plan for professional equality.
This programme's aims are to strengthen equity and fight discrimination. Its work is based on tangible objectives to bring about lasting change in work practices and also promote an inclusive culture.

Front view of the *Maison Française d'Oxford* on the campus of the university in the same city. DR

Researchers walking down a corridor at the Institut de Recherche en Informatique Fondamentale (IRIF). © Christian MOREL / IRIF / CNRS Images

MARCH

The CNRS reveals the second class of Fellow-Ambassadors.
These outstanding researchers are committed to promoting science internationally. This programme strengthens worldwide scientific collaboration and highlights the CNRS's role in international research.

APRIL

The CNRS presents its roadmap for health research which focuses on interdisciplinarity and innovation. The aims of this strategic plan are to speed up discoveries, reinforce partnerships and respond to the major health challenges of the present and future.

A study of fibrosarcomas at the Institute of Pharmacology and Structural Biology (IPBS). © Cyril FRESILLON / IPBS / CNRS Images

MAY

The organisation inaugurated the *Maison du CNRS* at the University of São Paulo, which also hosts the CNRS's South American Office. The CNRS also signed an agreement with the FAPESP, one of Brazil's foremost research funding agencies. The aims of this partnership are to attract researchers and launch new lines of research, even if there are prior institutional links. This paves the way for new Franco-Brazilian scientific cooperation projects.

The CNRS Ethics Committee, Comets, celebrates 30 years of study of scientific practices.
Comets promotes dialogue on ethical issues to support the scientific community in shouldering its responsibilities in a context of technological and societal change and progress.

© CNRS

JUNE

The CNRS bolsters its collaboration with China

by signing scientific cooperation agreements during the CNRS Chairman and CEO's visit to Beijing and Guangzhou. The aim of these reinforced partnerships is to promote exchanges of researchers, the development of joint projects and the joint exploration of innovative research fields by the two countries.

Antoine Petit, the CNRS Chairman and CEO, speaks in China.
© CNRS Office in China

The CNRS takes part in an event at the Senate to strengthen dialogue between science and public decision-making.

The organisation aims to inform public policy through scientific advances and its teams' expertise by promoting exchanges between researchers and decision-makers.

OCTOBER

In the framework of the Year of Geosciences

the CNRS offers a variety of educational resources, thus reinforcing its role as a scientific reference for teachers and students. By combining knowledge and innovation, the organisation helps spark scientific curiosity and educate the citizens of tomorrow.

CNRS Images, the organisation's multimedia library, makes thematic files of videos and photos on geoscience research available. Here, we see a temporary seismic station being installed in a gallery of the permanent seismological station in Plœmeur, in the Morbihan region. © Jean-Claude MOSCHETTI / OSUNA / LPG / CNRS Images

NOVEMBER

Antoine Petit, the Chairman and CEO of the CNRS, visits Australia and New Zealand

to consolidate scientific collaboration with these countries that focuses on strategic fields like health, climate and energy transition.

© Frédérique PLAS / CNRS Images

SEPTEMBER

The CNRS views the environmental transition as a strategic opportunity

and has appointed Stéphane Guillot as its new scientific officer for sustainable development and risks. By mobilising its teams and expertise, the CNRS works to develop interdisciplinary research to respond more effectively to climate challenges and support the required social and technological changes.

A structure in the Grandmont woods near Tours which is used to study the impact of climate change and urbanisation on forest insects,.
© David GIRON / IRBI / CNRS Images

DECEMBER

The CNRS celebrates fifty years of fruitful scientific collaboration with Japan

involving over 55 joint projects. This exemplary cooperation work is founded on strong institutional support and shared values like open science and academic freedom.

The CNRS awards its 2024 Gold Medal to Edith Heard

for her major contributions to epigenetics. Her research into X chromosome inactivation has transformed our understanding of the mechanisms that regulate gene expression and opened up new prospects in biology and medicine.

Research and innovation highlights

ENVIRONMENT, CLIMATE AND BIODIVERSITY

UGIEL - for sustainable colour science

UGIEL is a company founded by three CNRS researchers and specialises in colouring powdered raw materials using pigments created from recycled gold, silver and copper. In April 2024, UGIEL officially inaugurated its new workspace in the Amperis business park in Pessac to expand both its production and its team.

On the road towards greener tyres with BioDLab

The joint BioDLab laboratory works on reducing the environmental impact of tyres, bringing together experts from the Institute of Chemistry of Clermont-Ferrand and Michelin to work on developing technical solutions to facilitate the biodegradation of tyre wear particles generated during contacts with roads.

Launch of the SEE-Life programme

The CNRS's SEE-Life programme was launched in 2024 to carry out long-term monitoring of ecology and evolution. This monitoring provides essential data for scientists to study the adaptive mechanisms of living organisms. Such data also mean researchers can more effectively anticipate the impacts of environmental changes on biodiversity, taking into account the environment's socio-ecosystemic dimensions.

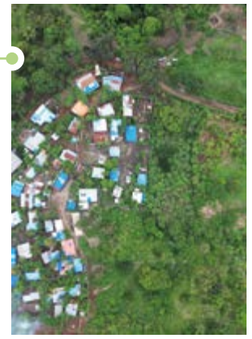
Cultures of *Parachlorella kessleri* and *Chlorella vulgaris microalgae* arranged on a shaking tray to obtain starters for cultures in larger bioreactors.
© Jean-Claude MOSCHETTI / GEPEA / CNRS Images

How microalgae eliminated heavy metals from polluted water

A Franco-Argentinian collaboration project involving the CNRS has shed light on a mechanism that enables a microalgae to remove zinc from a polluted river. The team used an atomic force microscope to demonstrate the influence on the molecular process of zinc removal of the nitrogen source in the water. These results pave the way for promising applications in bioremediation.

Population pressure and deforestation are threatening resources in Mayotte

A study by a team of CNRS scientists has highlighted the environmental consequences of changes in land use driven by increasing population pressure and migration for the island of Mayotte.



Settlements encroaching into forest ecosystems in Dzoumogné in the north of the island of Mayotte.
© Anthony FOUCHER / LSCE / CEA / CNRS Images

How can ecological diversity be maintained in a Darwinian competitive environment?

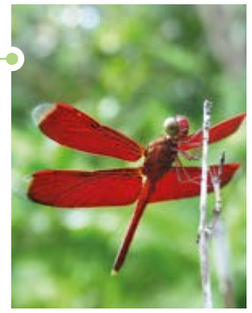
A study involving the CNRS demonstrated how spatial and relational heterogeneity in natural ecosystems contributes to maintaining high biodiversity despite population fluctuations. Migration between species and random interactions helps ecosystems to stabilise and avoid extinction, while also preventing major losses of biodiversity.

The decline of insects means data quality in ecology urgently needs to be enhanced

A multidisciplinary consortium that includes CNRS researchers revealed over 500 anomalies in the global InsectChange database used to evaluate insect decline. These errors call previous research conclusions into question and highlight the urgent need to reinforce the evaluation of ecological data by scientific journals.

Taking the high ground - a military strategy adopted by chimpanzees

A CNRS study has shown that West African chimpanzees use high vantage points to monitor their environment and prevent attacks from rival groups, a similar strategy to those used by human military techniques. These findings shed new light on our closest cousins' social behaviour and cooperative capacities.



A Neurothemis terminata dragonfly in the Badas Forest Reserve in Brunei Darussalam, in the north of the island of Borneo.
© Laurence GAUME-VIAL / AMAP / CNRS Images

THE ENERGY TRANSITION

A new joint laboratory to drive the transition to green hydrogen

One of the ideas to achieve industrial-scale green hydrogen production with a minimal carbon footprint involves producing it by the electrolysis of water using a proton exchange membrane (PEM). This joint laboratory was set up by the CNRS and Paris-Saclay University working in partnership with Elogen and aims to enhance the energy efficiency of current PEM electrolysers.

Storing solar energy in molecules to convert it into thermal energy

Researchers from the CNRS and Paris-Saclay ENS have discovered that certain photochromic molecules can store solar energy and then release it as heat if a small amount of acid is added, thus enabling repeated cycles of energy storage and conversion.

France 2030 - an ambitious research programme to explore light in new ways

The French Alternative Energies and Atomic Energy Commission (CEA) and the CNRS have launched the LUMA programme which has been granted £36.5 million of funding over seven years in the framework of the France 2030 plan. LUMA aims to explore the properties of light so innovative green technologies can be developed and to bolster France's international position in this strategic field.

MATERIALS

Laser writing unlocks nanophotonic functions in glass

CNRS researchers have developed a new, flexible and rapid approach for the manufacture of nanophotonic components. This opens up new prospects for the nanofabrication in volume of the next generation of integrated photonic components in standard optical materials.

Hybrid polymers for the storage and manipulation of digital data

CNRS scientists have created hybrid copolymers combining DNA and synthetic polymers. These materials enable the storage and manipulation of digital data at the molecular level which paves the way for promising revolutionary information storage solutions.

The design of metamaterials guided by AI tools

The structures of metamaterials often have complex arrangements of elementary cells and are capable of finely 'controlling' the waves that propagate through them. CNRS researchers have developed a methodology based on AI tools to design metamaterials that are capable of manipulating high-amplitude mechanical waves and thus creating vibration-protected zones.

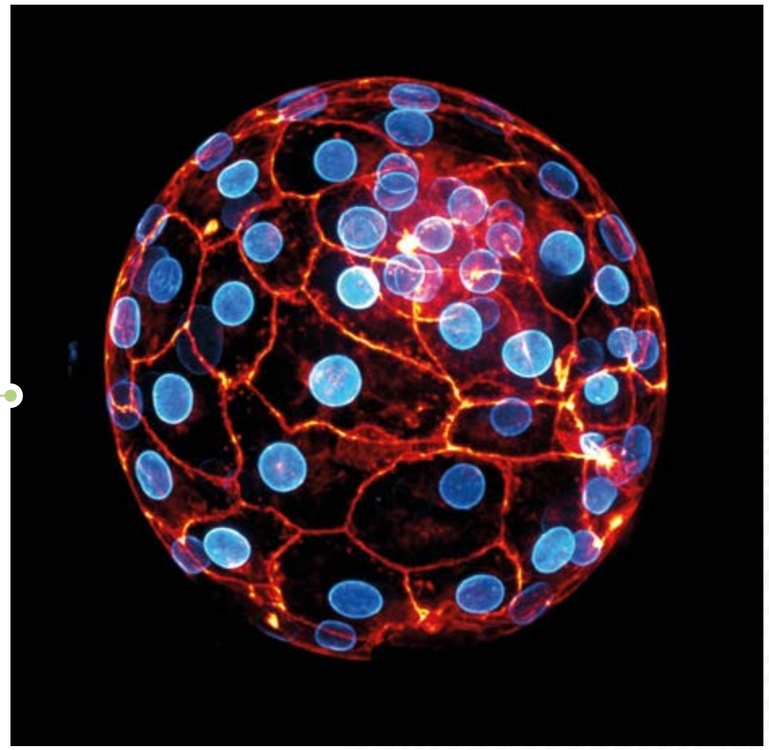
HEALTH

myWaves - a device based on neuroscientific research to enhance our sleep

In 2024, myWaves signed a licensing agreement with the CNRS to exploit a patent covering the development of a device that analyses delta brain waves to create a sound track that enhances sleep quality.

A human embryo at the blastocyst stage and ready to implant. The cell nucleus envelope is shown in blue with the actin cytoskeleton in orange. .

© Julie FIRMIN / Jean-Léon MAITRE / UGBD / Institut Curie / CNRS Images



The human embryo owes its first change to the contraction of its cells.

A team made up of researchers from the CNRS, the Institut Curie, the National Institute of Health and Medical Research (INSERM), the AP-HP and the *Collège de France* has discovered that the compaction of the human embryo - an essential stage in its development during the first days of formation - is driven by the contraction of its cells. This discovery should lead to improved *in vitro* fertilisation techniques.

© Néovacs

Néovacs and the CNRS working together on an therapeutic RNA vaccine for asthma

Messenger RNA (mRNA) therapies are promising for treating allergic and autoimmune diseases like asthma or psoriasis. The Neovacs company and the CNRS-affiliated *Unité des Technologies Chimiques et Biologiques pour la Santé* signed a collaboration agreement in 2024 to develop formulations for enhanced mRNA delivery.

Discovery of epigenetic cancers without DNA mutations

CNRS scientists have discovered that cancer can be induced by epigenetic modifications which play a role in regulating gene expression. This new discovery represents a challenge to the prevailing theory for the past thirty years or more by which cancers were thought to be predominantly genetic diseases caused by DNA mutations in the genome.

ExAdEx-Innov - innovative biotechnology for the study of human fat

In February 2024, this Nice-based start-up signed a licence agreement with CNRS Innovation to reinforce its research platform that focuses on adipose tissue with complementary stem cell research models. ExAdEx-Innov creates 3D human adipose tissue models to explore new therapeutic pathways and find out more about mechanisms linked to obesity, ageing and metabolism.

The Womed start-up treats female infertility

Womed is based at the CNRS's Innovation and Transfer Centre in Montpellier. It is launching a new medical device called Womed Leaf that combats female infertility and is also working on new innovations to treat fibroids and endometriosis. The start-up has just raised €6 million of funding.

THE UNIVERSE AND PLANET EARTH

XENONnT has detected solar neutrinos

The XENONnT experiment involving CNRS scientists succeeded in detecting solar neutrinos despite the small size of its Xenon detector. This breakthrough is a first in neutrino astronomy and clearly opens up new prospects for the study of astrophysical phenomena.

A stellar black hole has been discovered

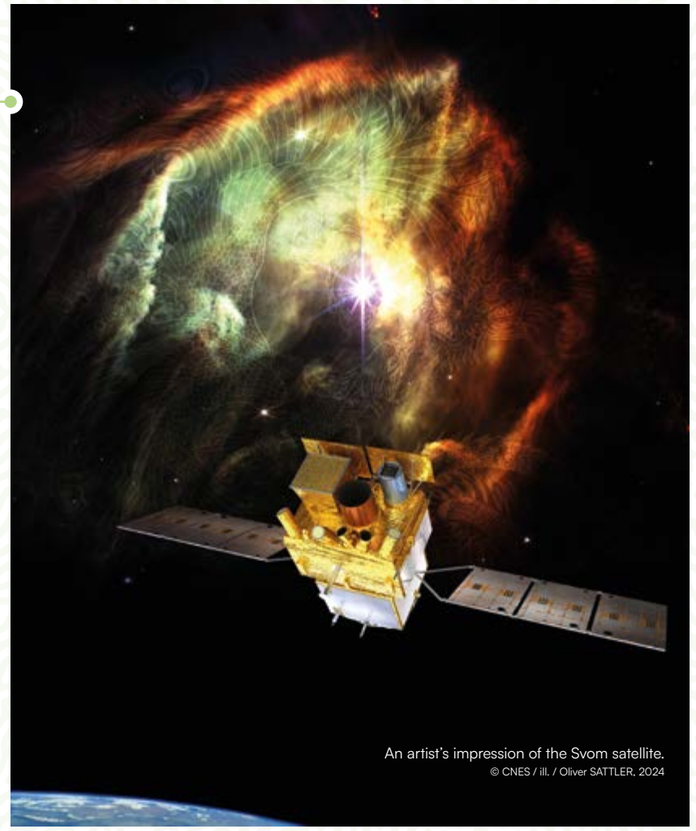
In April 2024, researchers working at the Paris-PSL Observatory used data from the European 'Gaia' satellite to help them discover a stellar black hole within our galaxy of approximately 33 solar masses in size, a discovery that challenges existing theoretical models of black hole formation.

The SVOM mission is launched successfully

The Franco-Chinese SVOM mission was launched from the Xichang base in China in June 2024. It is dedicated to studying the Universe's most energetic phenomena - gamma-ray bursts resulting from explosions or stellar mergers. This mission results from collaborative work by the China National Space Administration (CNSA) and the French Space Agency (CNES) with major contributions from the CEA and the CNRS for France.

An 'escalator' under the ocean

Following the recording of a series of compression earthquakes along the Atlantic ridge, a team of CNRS scientists modelled the complex deformations associated with oceanic expansion. In addition to extensional faults, they identified a zone of superficial compression in the young oceanic lithosphere, creating a kind of underwater escalator.



An artist's impression of the Svom satellite.
© CNES / ill. / Oliver SATTLER, 2024

AI, DIGITAL, MATHEMATICS

PyannoteAI: perfectly transcribed conversations with AI

Transcribe what is said, know who said it and at which moment. This phrase sums up the mission of PyannoteAI, a start-up based on a CNRS researcher's expertise accumulated during over ten years. The start-up won the pitch session co-organised at VivaTech by the CNRS and its network of technology transfer companies (SATTs).

A new international mathematics laboratory in Uruguay

On July 2nd 2024, the CNRS, the Uruguayan Ministry of Education and Culture and Universidad de la República (UdelaR) in Montevideo signed an agreement to set up an international mathematics research laboratory. The CNRS is thereby aiming to strengthen its commitment to Franco-Uruguayan cooperation by bringing together existing mathematics and computer science collaboration projects.

LINAGORA and the CNRS strengthen their research collaboration

The leading French free software company LINAGORA and the CNRS signed a framework agreement in 2024 to bolster the links forged during a decade of research collaboration between the two. This company relies on academic research input to develop the digital work environments of the future and be part of the emergence of open source and sovereign generative AI.

Two researchers united against scientific fraud

Two researchers from CNRS laboratories are developing algorithms to detect scientific fraud among the 130 million indexed articles that can identify randomly generated articles or those containing fictitious citations. Their approach is based on identifying signs of fraudulent content like awkward terms or unusual synonyms.

A strong and diverse French presence at the 2024 European Congress of Mathematics

The 9th European Congress of Mathematics (ECM 2024) took place in Seville from July 15th to 19th and was attended by nearly 1400 participants from 70 countries. The French mathematical community was strongly represented through the 'Math in France' stand run by CNRS Mathematics and its partners while five French researchers were also awarded EMS prizes.

Michel Talagrand, winner of the 2024 Abel Prize and former CNRS research professor at the Institut de Mathématiques de Jussieu-Paris Rive Gauche (IMJ-PRG).
© Frédérique PLAS / CNRS Images

Michel Talagrand, winner of the 2024 Abel Prize

Michel Talagrand, a former CNRS research professor, was awarded the 2024 Abel Prize, one of the most prestigious awards in mathematics. The award was in recognition of his revolutionary contributions to probability theory and functional analysis which have had remarkable applications in mathematical physics and statistics.

The resurrected voice of André Breton

The voice of André Breton, one of the founders of the surrealist movement, was reconstructed for the 'Surrealism' exhibition at the Pompidou Centre by a team of CNRS scientists using artificial intelligence. Visitors to the exhibition were offered a unique immersion in the history of surrealism featuring the poet's voice reading his own 'Surrealist Manifesto'.

Left: The cover of the 'Surrealist Manifesto' (1924).
© BnF, Paris
Right: A page from the original manuscript from the *Bibliothèque Nationale de France*.
© Adagp, Paris, 2024

PHYSICS AND QUANTUM PHYSICS

Why don't sleeping birds fall?

A team involving CNRS scientists has explained the phenomenon of 'tensegrity' that enables birds - the only permanent bipeds in the animal kingdom along with humans - to effortlessly maintain their balance in all circumstances. 'Tensegrity' is a neologism created from 'tension' and 'integrity' and is based on a subtle interplay between the tension and compression of elements of birds' bodies.

© AdobeStock / Nattawit

The surprising ballet of oxygen-28 neutrons

Oxygen-28, made up of 8 protons and 20 neutrons, is theoretically a 'doubly magic' nucleus and therefore stable. However, recent research involving CNRS teams revealed it to actually be highly unstable, with a lifetime of under 10^{-20} seconds. This instability is down to the proximity of nuclear orbitals which favours a superfluidity regime in which neutrons move freely between entangled orbitals.

The 2024 CNRS Physics foresight report for the period to 2030

In 2024, CNRS Physics published its scientific foresight report ('*Prospectives*') resulting from the collective work of over 1000 scientists. This document identifies the major scientific themes involved and the links between physics and society while providing insights into the evolution of research practices.

How to hide an image in quantum correlations of photons

Researchers have developed an innovative method enabling an image to be concealed by encoding it in the quantum correlations of pairs of photons, thus rendering it invisible to conventional imaging techniques.

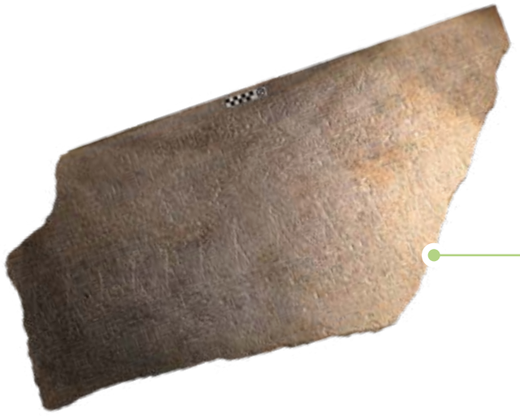
SOCIETAL HERITAGE

The birth of OPERAS France, the European infrastructure's national node

In January 2024, the CNRS and OpenEdition were asked to coordinate OPERAS France. This is the national node of 'Open Scholarly Communication in the European Research Area for Social Sciences and Humanities', a European infrastructure that promotes open access to research publications in the social sciences and federates the many stakeholders working in these fields throughout Europe.

The CNRS and L'Oréal sign a major agreement

The CNRS and L'Oréal have signed a framework agreement to bolster the long and fruitful collaboration between the organisation and the world leader in beauty. This new agreement opens up exciting new prospects for advanced and applied research while its central themes — the ecological and digital transitions — will drive effective responses to the future challenges facing the cosmetics sector.



This side of a 1.70-metre-long granite sarcophagus has been formally identified as belonging to the original sarcophagus of Ramses II.

© Kévin CAHAIL

The researchers' findings were based on a study of contemporary patrilineal populations, with this photo showing a population in Central Asia. .

© Evelyne HEYER, Laure SEGUREL

A social change could be behind the decline in genetic diversity of the Y chromosome at the end of the Neolithic period

A study involving CNRS researchers has found that the emergence of a patrilineal social system (in which a child systematically belongs to the lineage of his/her father) in the Neolithic period could explain a dramatic decline in the genetic diversity of the Y chromosome. This phenomenon favours certain lineages and is thought to have had more of an impact on the Y chromosome than mortality during combat.

An unprecedented assessment of restorative justice in France after 10 years of practice

A report led by two researchers (one is from the CNRS) in the sociology of law and justice takes a generally positive though nuanced view of the practices and effects of restorative justice in France. This system enables perpetrators and victims of crime to engage in confidential dialogue as a complement to and throughout criminal proceedings.

The sarcophagus of Ramses II finally identified

Researchers have succeeded in identifying the sarcophagus of Pharaoh Ramses II (1279-1213 BC) following the re-examination by an egyptologist from a CNRS unit. The researcher re-examined the hieroglyphics and decoration on a granite fragment from a sarcophagus discovered in 2009 by an Egyptian archaeologist in Abydos, Egypt.

Knowledge sharing highlights

JANUARY

'*Matheuses: les filles, avenir des mathématiques*' (Female mathematicians: girls are the future of mathematics) is a report on a sociological survey of the 45 secondary school girls who participated in the 'Les Cigales' mathematics courses jointly run by the *Institut de Mathématiques de Marseille* and the Computer Science and Systems Laboratory (LIS). This book explores and criticises gender inequality in mathematics, aiming to raise public awareness of the challenges facing girls aspiring to be mathematicians.

FEBRUARY

PlanktoQuest is an immersive virtual reality application whose users can explore and manipulate marine plankton with their hands. The application uses 3D models of different microalgae organelles generated by 3D electron microscopy and has been presented at several science outreach events. These include the '*Échappées Inattendues*' event at the *Musée des Arts et Métiers* in Paris on February 17th and 18th 2024.

The PlanktoQuest app being presented to the public.
© MSabourdy

APRIL

'Notre-Dame Whispers' is an immersive audio tour of the famous Parisian cathedral which is free for smartphone users on the 'EKKO of Notre-Dame de Paris' app. This tour was coordinated by a CNRS research professor and guides the public through the sound and musical history of this icon of Gothic architecture.

App design: Arthur RETROU, Talkartive

Between 2022 and 2024, the CNRS set up '*Anthropologie en partage*' (Sharing Anthropology), a series of outreach events designed to promote anthropological research. These have included a competition, a photo exhibition and an art-science event.

The competition winners, from left to right: Seyta Ley-Ngardigal, Aïcha Loïal, Mélyne Baudin-Marie, Elie Kadoche, Wendy Le Mouëllic..
© MT180 France Universités-CNRS, David PELL

JUNE

On June 5th, the final of the 'My thesis in 180 seconds' competition, organised by the CNRS and France Universités took place on the stage of the Opera House in Nice. A packed audience watched the 16 finalists present their thesis topics in just three minutes flat! The winner of the jury prize, Wendy Le Mouëllic, then went on to represent France in the competition's international final in Abidjan alongside winners from around 20 countries.

29
academic networks

+ 300
PhD students trained in scientific outreach

143k
people watched the final live on the 'FibreTigre' Twitch channel

SEPTEMBER

To celebrate the CERN's 70th anniversary, a thematic weekend dedicated to particle physics was organised at the *Cité des Sciences et de l'Industrie* in Paris by the Cité des Sciences, the CNRS, the CEA, the French Physical Society and, of course, THE CERN. 1800 visitors attended the event which featured 20 conferences, immersive exhibitions, interactive demonstrations, games and a screening of the film '*Le Fantôme de l'Univers*' (The Ghost of the Universe).

The book '*Tout comprendre (ou presque) sur l'eau*' explores the crucial importance of fresh water for humans, fauna and flora. Water's domestic, agricultural, industrial and energy roles are discussed alongside an examination of challenges and uncertainties linked to water's availability and quality in the context of climate change.

A visit to an anechoic chamber at the Laboratory of Mechanics and Acoustics in Marseille. This exceptional environment features the (almost total) absence of reverberation which creates a unique sensation of sound insulation that is ideal for high-precision acoustic testing. © CNRS / Haguenauer

OCTOBER

From October 4th to 14th 2024, CNRS laboratories and experimental platforms throughout mainland France again opened their doors to the public for ***'Visites insolites'*** . A few lucky people chosen at random were given the opportunity to make 'unusual visits' to extraordinary research facilities, inaccessible sites and unusual experiments.

3393 people took part in the draw

59 visits were organised

50 laboratories were involved

Secondary school students listening to a presentation of the Strasbourg Institute of Materials Physics and Chemistry (IPCMS / CNRS Unistra) on the CNRS campus in Cronenbourg. © CNRS / Olivier FÉLY

The positive effects of the 2023-2024 Year of Physics.

This initiative has opened up new prospects for young people who are still not sufficiently encouraged to take up careers in science. It showed them the wide range of subjects that physics covers and the variety of careers available in the field. Meetings were held across the country along with awareness-raising outreach activities aimed at both schoolchildren and teachers.

© Cité des sciences et de l'industrie

In the framework of its partnership with Universcience, **the CNRS took part in the '*Grotte Chauvet, l'aventure scientifique*'** (The Chauvet Cave - a scientific adventure) event which began on October 15th at the *Cité des Sciences et de l'Industrie* in Paris. This exhibition for the general public showcased CNRS research in many fields including archaeology, palaeoenvironment, archaeozoology, the science of dating, cultural anthropology and geomorphology.

NOVEMBER

From November 4th to 18th, CNRS Chemistry and the Paris-Normandy regional office presented their **'Chemical Risks & Prevention Posters'** exhibition in the gallery of the Gérard-Mégie campus. The posters that were showcased were designed by CNRS Chemical Risk Prevention to raise awareness of best practices in labs.

From November 15th to 17th 2024, the CNRS's '*Échappées inattendues*' programme organised a festival at the *Collège Graphique* in Lyon combining science and graphic novels. © CNRS / Vincent NOCLIN

2024 marked the 2nd anniversary of the launch of the '*Échappées inattendues*'

scientific outreach programme rolled out across France. This gives the general public the opportunity to explore and discover science by meeting researchers. The 2024 events included a special 'Ocean' weekend at the *Musée des Arts et Métiers* in Paris, a day at the La Rochelle Aquarium and three dedicated days on graphic novels at Lyon's Collège Graphique.

Over 200
conferences organised throughout France

Over 12,000
live spectators

Over 60,000
views on replay

SOCIAL MEDIA

2.3M
views on the CNRS's YouTube channel

100k+
views on Instagram which puts the CNRS in the 'macro-influencers' category with 2 million views of reels

DECEMBER

Another success for Terra Numerica in 2024,

the consortium founded by the CNRS, the National Institute for Research in Digital Science and Technology (Inria) and Université Côte d'Azur to organise digital sciences workshops and conferences for all audiences. Nearly 380 events have been held since 2018, reaching over 25,000 students, 4000 teachers and 60,000 members of the public.

39
national programmes led or co-led by the CNRS at the end of 2024

12
projects selected by the CNRS in 2024 for the 'Research at Risk' programme

Over
55,000
articles from laboratories under CNRS supervisory authority including

nearly
95%
of articles by CNRS researchers in open access

1st
beneficiary organisation of European research funding

3 questions for

Alain Schuhl,
Deputy CEO for Science

© Frédérique PLAS / CNRS Images

"For forty years, the CNRS has been the leading beneficiary of European research funding."

2024 began with the CNRS unsubscribing from the Scopus commercial database. What assessment would you make of this decision one year later? What other advances were achieved last year in open science?

That's right, on January 1st the CNRS *did* withdraw from Elsevier's bibliographic database. This decision was the first step towards freeing ourselves from commercial databases to switch progressively towards free bibliographic tools that are compatible with the organisation's open science policy. The annual saving of €500,000 on our Scopus subscription also meant we could acquire additional storage capacity at the Institute for Development and Resources in Intensive Scientific Computing (Idris) in the framework of its new service offer for research data with France-Grilles.

There's been a total absence of negative reactions so it's clear we made the right choice and could even have made it earlier. It's also therefore led us to consider unsubscribing from the other bibliographic database, Web of Science.

Alongside this, the main European open science news involves the brand new federation initiated by the European Open Science Cloud programme. The CNRS has made a significant contribution to this federation by proposing three nodes. The Data Terra infrastructure that the CNRS coordinates has already been approved as the French national node and we have every hope this will also be the case for the Escape nodes for astronomy and particle physics and HAL+ for open archives.

Last year, the CNRS appointed a new scientific officer for sustainable development and risks, carried out its second carbon assessment and signed the Heidelberg Agreement for sustainable research. How are the organisation's research practices being changed by the environmental transition?

Stéphane Guillot's appointment has given strong impetus to our approach and reinforced its scientific character. His mission is to drive and coordinate the transformation and mitigation of the impacts of research practices, basing this particularly on our Institutes' work towards their foresight reports.

The organisation's second carbon footprint assessment for the year 2022 highlighted the successes of our low-carbon transition plan developed following the previous assessment for 2019. It particularly showed the significant cut by half in three years of emissions linked to work-home travel, buildings and, above all, air travel.

The CNRS's commitments are part of a proactive European context, as is reflected in the Heidelberg Agreement which we signed along with several other European funding agencies and research organisations.

A report by France's Court of Auditors expressed concern about French results in European collaborative projects. What is the CNRS's position on these programmes?

As the report underlines, what is the case for France is not the case for the CNRS. For forty years now, the CNRS has been the leading beneficiary of European research funding and this is also true for Horizon Europe, the ninth framework programme, with €664 million of funding received since 2021.

The plan we implemented in 2021 is beginning to bear fruit, particularly our recruitment of 80 European project engineers and the launch of the *Amorce* programme. CNRS funding from Horizon Europe increased by almost 25% between 2019 and 2024; the number of CNRS applications for collaborative project funding has risen from 89 in 2021 to 149 in 2024; the number of applications for ERC Starting Grants increased by 15% between 2022 and 2024, and so forth.

We may therefore reasonably assume that new partnerships will be formed with the arrival of the PEPRs and lead to new collaborative European projects.

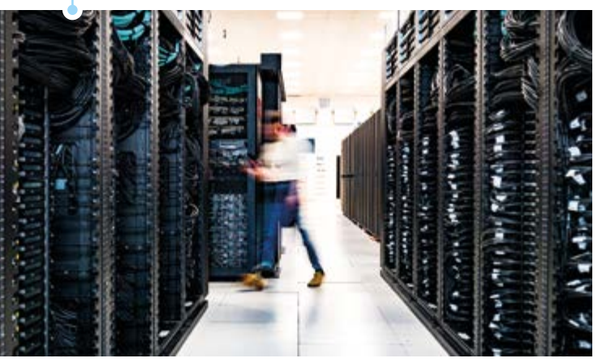
© CNRS / BRGM / SGF / MNHN

Launch of the Year of Geosciences

In November 2024, 'L'*Année des Geosciences*' was launched in partnership with the Ministry of National Education. This initiative covers the 2024-2025 school year and aims to raise awareness about the importance of geosciences among young people and the general public, to promote the scientific approach and encourage vocations in professions that are essential for the future.

Expansion of the Jean Zay supercomputer

To bolster artificial intelligence research in France, the French government has supported the new expansion of the Jean Zay supercomputer's computing capacity which went operational in summer 2024. Also in 2024, the CNRS funded a project to increase Europe's leading supercomputer's storage capacity planned for 2025.



Between the computer racks of the Jean Zay supercomputer's fourth extension. © Cyril FRESILLON / IDRIS / CNRS Images

The CNRS opens its eleventh office in Nairobi

In the framework of the CNRS's multi-year cooperation plan with Africa, in October 2024 the organisation opened its eleventh international representative office. The new office in the Kenyan capital will provide support for this multi-year plan for Africa by covering East, Central and West Africa and complementing the office in Pretoria covering Southern Africa which is jointly run by the CNRS, the Research Institute for Development (IRD) and the French Agricultural Research Centre for International Development (CIRAD).

The CNRS and the University of the Antilles set up an interdisciplinary incubator for the French Antilles

As part of its roadmap for France's overseas territories, the CNRS and the University of the Antilles jointly launched an initial call for projects with four research projects selected to be part of this interdisciplinary incubator for the French Antilles. The overall aim is to develop projects based on structuring consortia rooted in this territory.

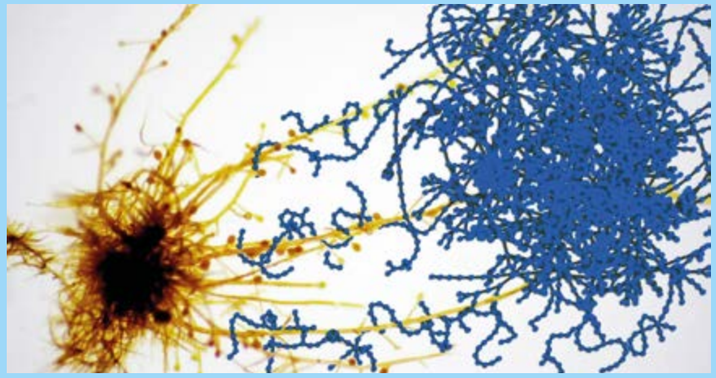
Changes to the Sections of the National Committee

Two new sections of the National Committee for Scientific Research (CoNRS) were created in 2024 with the names and/or scope of eight other sections changed to reflect new developments in scientific research and its international impact. These changes came a year before the end of the terms of the current sections in September 2025.

FOCUS

A conference **to celebrate the fifth anniversary of the 80|Prime programme**

At the end of September 2024, a conference organised at CNRS headquarters by the CNRS's Mission for Transversal and Interdisciplinary Initiatives (MITI) was an opportunity to evaluate the success of the 80|Prime programme since its 2019 launch on the occasion of the organisation's 80th anniversary. For five years now, the 80|Prime programme has been supporting original multi-team interdisciplinary projects for breakthrough research developed with the combined expertise of at least two laboratories from different CNRS Institutes. This represents at least 160 teams per year with the programme helping to promote and structure certain research themes at the interface between disciplines. The 80 selected projects each receive a maximum annual budget of €30,000 over a two-year period. One unique feature of this call compared with the Miti's other call for projects is that the selected projects are backed up with a three-year PhD contract to promote training by and for research and also to introduce PhD students to interdisciplinary approaches.



The Algo-Metabionte project was awarded the 2024 Prime programme label, working as it does at the interface between biology and computer science. The project studies the dynamics and co-evolution of metabolic interactions in brown algae. © D. SCORNET, G. COLLET

The initial assessment made during this conference highlighted the smoother interaction this programme facilitates between the Institutes and particularly their scientific management boards. After two years of implementation and experimentation, the efforts made in the framework of the programme have now borne fruit with very positive feedback coming from the Institutes. The programme has enhanced interdisciplinary collaboration between the Institutes, with projects being jointly constructed throughout the year.

As well as disciplinary mixes, 80|Prime promotes geographical diversity which is a real boost for the CNRS's scientific dynamic. On average, a third of these projects are run by teams located on the same site but the others are spread across France - from Brest to Paris, via Perpignan

Nearly
1600
active companies from laboratories under CNRS supervisory authority since 1999 including nearly 100 set up in 2024

158
start-up projects supported by RISE, including 25 in 2024

438
projects supported by the prematuration programme since 2014, including 60 in 2024

23
framework agreements with companies

7th
place in the INPI ranking of patent filers in 2024

59
winners in innovation competitions, including 20 i-PhDs, 24 i-Labs and 15 i-Novs

4 questions for

Mehdi Gmar,
Deputy CEO
for Innovation

© Cyril FRÉSILLON / CNRS Images

"More than ever, the CNRS is the reference partner for companies who want to innovate."

What is the CNRS's place in 2024's innovation landscape?

More than ever, the CNRS is the reference partner for companies who want to innovate. Our strength derives from our ability to combine the long timeframes of basic research with the rapid pace of industry. We act as a link between these two spheres by creating the right conditions for fruitful collaboration between academic laboratories and partner companies.

How does this work in tangible terms?

In 2024, we signed new framework agreements with L'Oréal and LINAGORA which means we now have almost 300 operational joint laboratories with new labs being set up in fields as diverse as chemistry, AI and materials. The Molten Salt Lab jointly run with NAAREA and Paris-Saclay University and dedicated to molten salt chemistry research, and the BioDLab, with our long-standing partner Michelin and the University of Clermont-Auvergne, working on the environmental impact of tyres, are splendid examples. These collaboration projects illustrate the CNRS's multidisciplinary excellence and our capacity to respond effectively to industrial challenges.

We also rely on the tremendous work carried out by our technology transfer engineers who have been in place since 2022. The structuring of this network is bearing fruit with bridges between laboratories and companies being strengthened throughout France.

How do you support the emergence of innovations deriving from research?

We support research staff at every stage and right from the start of a project. In 2024, the CNRS's prematuration programme celebrated its 10th anniversary with nearly 400 projects funded since its creation. It is an essential lever for transforming scientific results into innovations. There is also the RISE programme which celebrated its 5th anniversary in 2024. RISE has enabled many high-potential start-ups to be created, like ExAdEx-Innov which specialises in models derived from adipose tissue.

We need to continue creating the right support tools for all projects deriving from research which is why the PISE programme was launched in 2024 to promote projects with a societal and environmental impact alongside a second wave of the OPEN programme that promotes free software.

We are continuing to reinforce both this continuum of support and funding for innovation in close collaboration with private sector organisations. This is a key factor in helping projects grow.

A word on this year's other highlights?

We launched our network of innovation ambassadors at a fringe event at the VivaTech trade exhibition. In the field, these women and men work on sharing their experience within their laboratories or research communities to develop an innovation culture in our research units.

The CNRS also received the Clarivate Award for its ranking in the Top 100 Global Innovators. And finally, three exceptional researchers were awarded the CNRS Innovation Medal - Cyril Aymonier, Lydéric Bocquet and Eleni Diamanti. Their careers embody everything we stand for - scientific excellence that serves society.

Joint laboratories - catalysts for dialogue between research and companies

On April 12th 2024, the CNRS invited the heads of nearly 40 joint laboratories set up in 2023 to Paris, illustrating the vitality of public-private partnerships of this kind. There are nearly 300 currently active structures of this sort and such collaborations help ground academic research in industrial challenges while also reinforcing innovation and the transfer of knowledge to society. This sustainable innovation model was rightly hailed by all present at the event.

Vincent Garnier, the director of Safran Tech, speaking at the lunch for representatives of companies and laboratories. This was an opportunity for Mr Garnier to share his experience and confirm his interest in this kind of partnership with the CNRS. © Julien MORO / CNRS

The CNRS's innovation ambassadors

The CNRS innovation ambassadors programme launched in May 2024 involves around 50 researchers from our units. These ambassadors' experience in patents, setting up companies and industrial partnerships feeds into their work on promoting a culture of innovation in their laboratories and research ecosystems. The aim of this initiative is to drive the transfer of research results to the socio-economic sphere.

OPEN - a new lever to promote free software

The OPEN programme launched by the CNRS in 2023 supports the promotion of free software developed in our laboratories. Over 50 projects were submitted following an initial call for expressions of interest with six selected for tailored support. In view of their success, a second year group was selected at the end of 2024 which confirms the growing interest in innovations with a strong societal impact of this kind.

The CNRS celebrates a decade of innovation

On October 28th 2024, the CNRS celebrated the tenth anniversary of its prematuration programme which supports researchers who want to transform their discoveries into proofs of concept. This initiative represents the first step towards technology transfer and supports over 60 projects across all disciplines each year. The programme helping to drive the emergence of start-ups and innovations derived from basic research.

The CNRS stand at VivaTech. © David PELL / CNRS

The CNRS at VivaTech 2024 - promoting innovation from public research

The CNRS was present at VivaTech 2024, Europe's leading innovation fair, to showcase ten deeptech start-ups from its laboratories that represent major advances in health, sustainable development, space and digital technology.

Over four days, experts, researchers and entrepreneurs were able to engage with members of the public to illustrate the organisation's capacity to drive breakthrough innovations and transform basic research into solutions with a strong societal impact.

FOCUS

The **transfer engineers** programme

In 2022, the CNRS launched a programme aimed at reinforcing collaboration between researchers working in its laboratories and the industrial sphere. This involved the creation of a new role - the transfer engineer who acts as a true intermediary between the academic research and business spheres. The role of these engineers is to reach out to companies, understand their innovation requirements and offer them the expertise of the laboratories under the supervisory authority of the CNRS. Transfer engineers simplify this process of connecting future industrial partners with the right researcher(s) and subsequently then support the construction of a long-term relationship between them that is based on trust.

Over time, this programme has become highly structured and recruitment efforts now focus on high-level profiles that can genuinely drive value creation and complement our researchers' skillsets. Each staff member is given defined objectives with clear success criteria and is supported in developing their skills in what is still a relatively new profession at the CNRS. Transfer engineers are integrated into regional networks organised according to the economic sector involved and coordinated by the CNRS Business Relations Department to match company requirements with the most relevant researchers to maximise the added value involved.

Currently, the transfer engineer programme is made up of 73 professionals covering all the innovation areas defined by the industrial sector that are suitable for one of our 1000 laboratories to work on. In 2024, transfer engineers identified and processed over 980 opportunities which resulted in 136 research collaborations and 195 scientific services being provided. The initial feedback is highly encouraging. Our industrial partners praise the quality of the support and the value of the proposed innovations while the researchers involved are displaying a real commitment to this partnership-based dynamic.

This is a flagship programme for the CNRS and is set out in the Objectives, Means and Performance Contract (COMP) signed with the French government. The programme provides active support for innovation and the competitiveness of French and European companies, reaffirming the CNRS's role as a driving force for innovation in the socio-economic sphere through excellence in research linked to economic needs.

Over
34,700
staff members including over 11,000 contractual employees

of which nearly
44%
are women

Over
620
permanent staff members recruited in 2024

47.5%
of CNRS employees worked from home in 2024

Over
11,750
staff members received training in 2024,

including
25%
of contractual employees

3 questions for

Christophe Coudroy,

Deputy CEO
for Resources

© Frédérique PLAS / CNRS Images

In 2024, what measures did the CNRS implement to enhance its attractiveness?

Several significant actions were taken during the year. On attractiveness, our Human Resources Department was reorganised to respond more effectively to staff recruitment and retention requirements. Similarly, the attractiveness plan has led to several tangible advances, like our internal mobility scheme being made more flexible by bringing the FSEP and Noemi procedures closer together. Above all, a bonus was introduced for support staff members in July 2024 and we hope that future budget allocations will enable this to be extended to all engineers and technicians in the future.

Furthermore, in line with the CNRS's principles of inclusion and social responsibility, at the end of the year the organisation adopted its fifth action plan for disabled people following extensive social dialogue.

Has progress also been made on administrative simplification?

We obtained a decree in July 2024 to abolish the meal expense receipts required since 2019. Alongside this, instructions were sent to laboratory managers asking them not to request more supporting documents than those required by law. It's important that practices are neither stricter nor more lax than the standards and an action plan has been developed on this matter which actually affects the daily lives of our scientists. Even more radically, the CNRS has strongly advocated the development of flat-rate expenses which means expense receipts and timesheets are no longer required.

"The HR department has been reorganised to respond more effectively to recruitment and staff retention requirements."

As regards the computerised management of travel for work purposes, several important changes requested of our service provider have finally been implemented, particularly the possibility of pre-booking tickets without unit management needing to approve the budget for the entire mission in advance and also the end of print duplicates.

A lot still needs to be done in terms of simplification while distinguishing between what is part of the CNRS's remit and what is not. In fact, this is one of the key focus points in the Objectives, Means and Performance Contract with our supervisory authority ministries which was adopted by the Board of Trustees on December 20th 2024.

It is also worthy of note that the Overall Sustainable Development and Social Responsibility Plan was presented at the same meeting. This sets out a series of guidelines for optimising the organisation's consumption of resources.

How has the CNRS worked at the site level?

Within the CNRS, to give just two examples, units that wish to do so can now digitise the approvals of purchasing orders and also the use of secure electronic laboratory notebooks is increasing. In fact the innovative nature of the latter system was awarded the Crystal Collective Medal this year.

At the seventeen experimental sites that the Ministry selected following the Gillet report, exchanges with partners have intensified and numerous projects and tangible achievements along those lines are already underway.

Beyond these pioneer sites, our teams are taking part in various national working groups set up in conjunction with the IGESR (*General Inspectorate for Education, Sport and Research*) for issues that go beyond the local scope. For example, these include the preparation of common internal regulations and a joint unit convention. We're particularly happy that the work has mainly been based on documents that are already in place at the CNRS.

Antoine Petit, Chairman and CEO of the CNRS, receives the prize from Iliana Ivanova, the European Commissioner for Innovation, Research, Culture, Education and Youth.
© European Union, 2024

The CNRS is awarded the European Prize for Gender Equality in the 'advanced' category

On May 15th 2024 in Brussels, the CNRS received the European Gender Equality Prize in the 'advanced' category in recognition of the organisation's commitment in this area for over twenty years now. The €100,000 prize awarded on this occasion has since been used to fund childcare during scientific events.

The CNRS launches its fifth disability plan

Following on from the organisation's first four action plans run since 2007, last year the CNRS voted to implement its fifth disability plan to come into effect in 2025. Its integrated approach means that it affects all processes - from human resources to purchasing and including general resources and management.

The HR department is reorganised to enhance the organisation's attractiveness

The organisation of the CNRS's Human Resources Department has evolved from a structure based on employee status (scientists, engineers and technicians) to one based on the major stages of the careers of staff members. This aim of this change is to work more effectively towards the objective of attractiveness in terms of recruitment, integration and retention.

The CNRS's purchase orders go paperless

Starting in September 2024, digital approval using the Geslab tool can now replace handwritten signatures on purchase orders. This innovation means units benefit from enhanced traceability, security and flexibility and allows staff members with signing authority to approve documents from any location.

A barley plant taken out of its rhizotest, a device used to grow plants to be grown in a climate chamber to observe the toxicological impact of pollutants.
© Jean-Claude MOSCHETTI / Géosciences Rennes / CNRS Images

CNRS rolls out its first Spaser

The CNRS's scheme to promote socially and environmentally responsible purchasing (Spaser) is the result of a collaborative process between various stakeholders in 2024 led by the Purchasing and Innovation Office (DDAI).
This scheme sets ambitious social, environmental and ethical goals for the organisation's purchases.

FOCUS

The CNRS and its partners **join forces for European projects**

© StockAdobe.fr / artjazz

On February 16th 2024 the Mission Europe for Research (MER) was inaugurated in Marseille. This is a one-stop shop for applications for European funding for research and innovation, supported by Aix-Marseille University, the CNRS, the National Institute of Health and Medical Research (INSERM) and the Research Institute for Development (IRD).

Following on from the successful initial joint collaboration in 2017 on the A*MIDEX initiative of excellence that aimed to increase their scientists' success rates in the ERC programme, in 2021 these four institutions choose to pool their respective European units to set up a one-stop shop for all of their researchers, regardless of their home institution. The new MER will simplify the administrative process for scientists applying for European funding and also increase and diversify the services available to the scientific community by pooling the teams of the four partner institutions and recruiting new staff members with varied profiles.

This form of personalised service is based on the lessons learned from a study by these teams at the end of the H2020 programme. The study found that ten research units alone received over half of the site's European grants while around half of all the laboratories received no funding. The successes and the concentration on ERC projects also came at the expense of collaborative projects. These only accounted for 30% of the European grants obtained even though nearly three-quarters of the H2020 budget was allocated to projects of this kind.

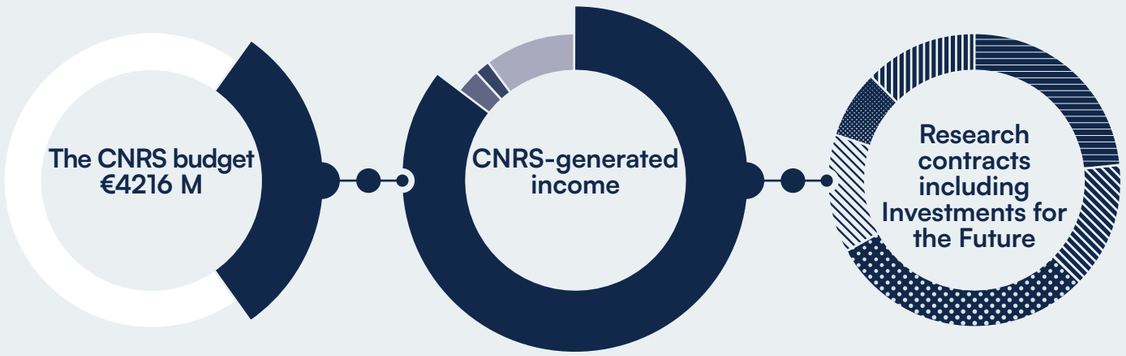
In the light of this, the MER is part of the 'Europe' action plan which enabled five pooled European project engineers to be recruited to support the teams involved and assist with their projects. The experience and expertise in European project engineering of the staff members of the European units of the four partners from the Provence region led their respective management teams to approve the creation of a shared unit to serve research and scientists. Indeed, one of the MER's unique features is that it was jointly created by its own staff, mirroring its strategic co-construction by the partner institutions.

In this way the MER represents an initial response from the academic community to the Gillet report's recommendations calling for administrative simplification and enhanced joint coordination by universities and research organisations.

Statistics and indicators

THE CNRS BUDGET

Resources



Public service subsidy: €2948 M (70%)

including a 'thermal renovation' grant from the French Recovery Plan: €5 M

and a subsidy for investment costs: €1 M

CNRS-generated income: €1268 M (30%)

Research contracts including Investments for the Future: €1081 M (85%)

Service activities and product sales: €36 M (3%)

Royalties for patents and licences: €22 M (2%)

Other subsidies and revenues: €129 M (10%)

National Research Agency (ANR): €254 M (23%)

European Commission: €150 M (14%)

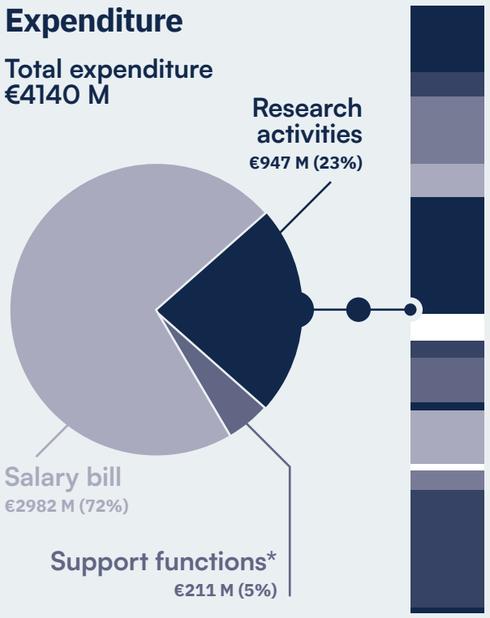
Other public institutions and companies: €322 M (30%))

State: €139 M (13%)

Local authorities: €81 M (8%)

Private sector: €135 M (12%)

Expenditure



INC: €103 M (11%)

INEE: €36 M (4%)

INP: €105 M (11%)

IN2P3: €53 M (6%)

INSB: €182 M (19%)

INSHS: €42 M (5%)

INS2I: €27 M (3%)

INSIS: €70 M (7%)

INSMI: €13 M (1%)

INSU: €84 M (9%)

Scientific operations outside the Institutes: €9 M (1%)

Scientific operations outside the CNRS: €31 M (3%)

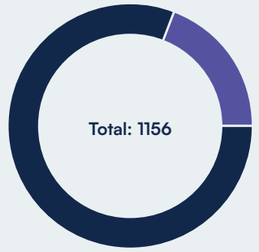
Very large scientific equipments: €183 M (19%)

Scientific and technical information: €9 M (1%)

Source: BFC data — processing: CNRS/DCIF-DSFIM. * Operating costs, equipment/facilities and investments not related to research activities

LABORATORIES LINKED TO THE CNRS AND ITS PARTNERS

Laboratories linked to the CNRS



Support and research units: 221

Research units: 935

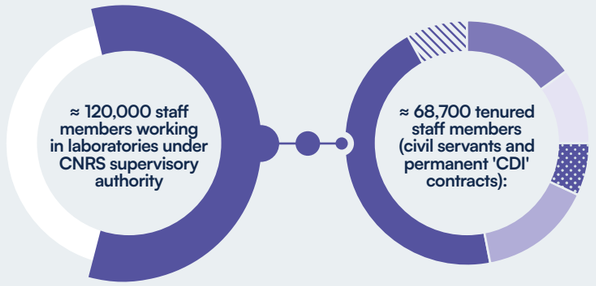
And 95 Research Federations

Source: Réséda data on 31/12/2024 - processing: CNRS/DAPP

Staff members in laboratories linked to the CNRS by personnel category and employing establishment category

(in natural persons on December 31st 2024)

Basis for calculation: EMRs, IRLs, UMRs, UPRs, URs, UARs/UMSs



Tenured staff members (civil servants and permanent contract holders): **58%**

Non-tenured staff members (including 3/4 of PhD students): **42%**

CNRS engineers and technicians: 15%

Higher education and research (ESR) engineers and technicians: 10%

Engineers and technicians from other institutions: 7%

CNRS researchers: 15%

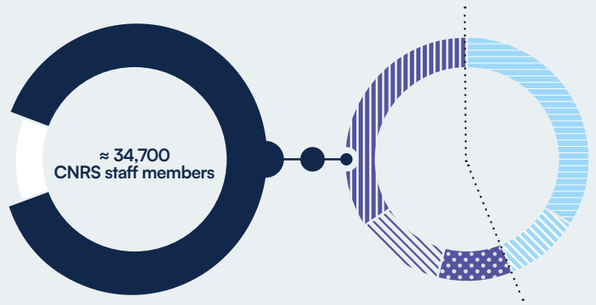
ESR academics: 45%

Researchers and academics from other institutions: 8%

Source: Réséda data on 31/12/2024 - processing: CNRS/DAPP

CNRS staff members from laboratories linked to the CNRS

(in salaried natural persons on December 31st 2024)



Assigned to research or support units: 89%

Outside the calculation basis of EMRs, IRLs, UMRs, UPRs, URs, UARs/UMS: 11%

Tenured engineers and technicians: 34%

Non-tenured engineers and technicians: 10%

Engineers and technicians 44%

Postdoctoral students or researchers on fixed-term 'CDD' contracts: 10%

PhD students: 12%

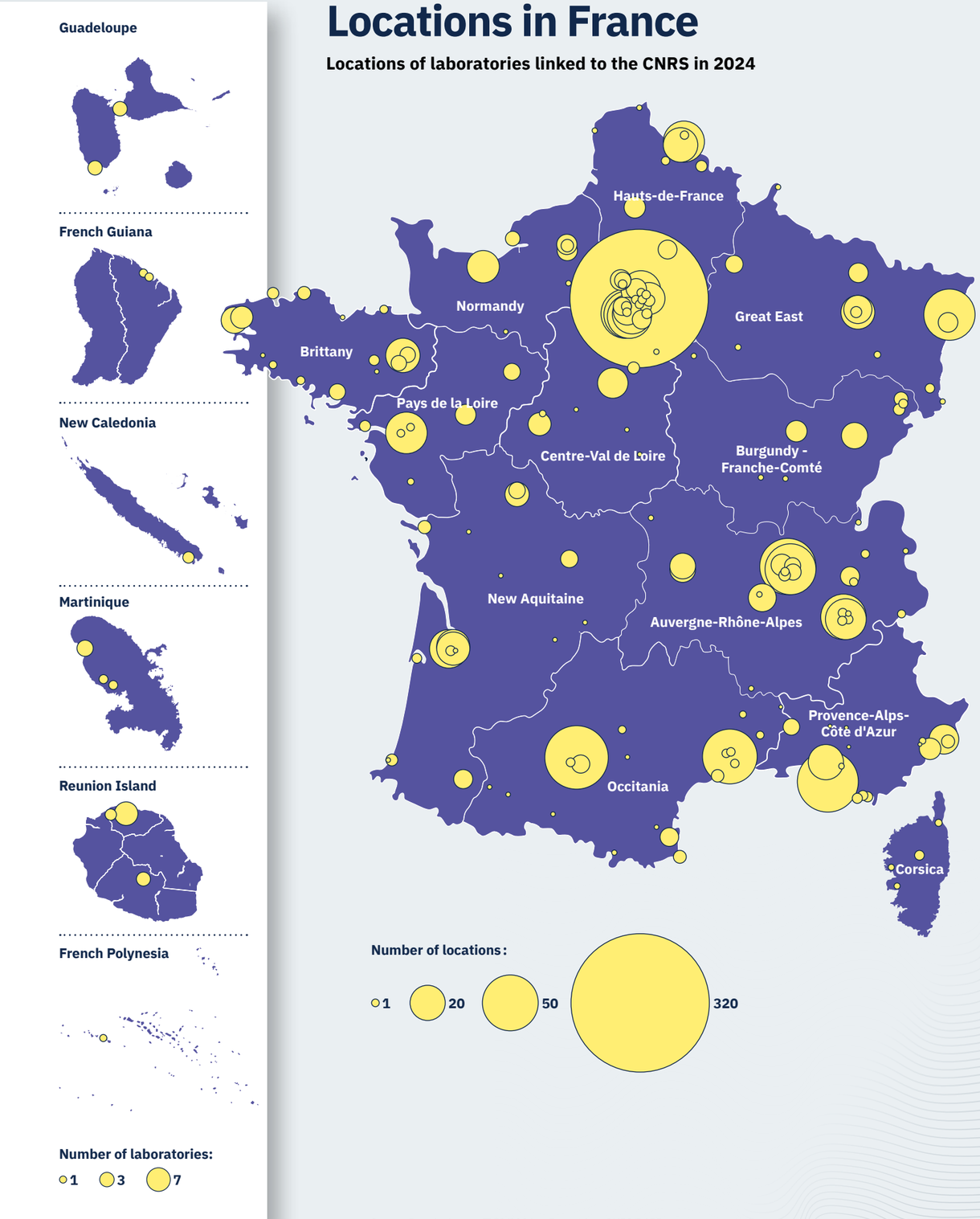
Tenured researchers: 34%

Researchers 56%

Source: Sirhus data as of 31/12/2024 - processing: CNRS/DRH/SPP-PM

Locations in France

Locations of laboratories linked to the CNRS in 2024



Source: Réséda data on 31/12/2024 — Processing: CNRS/DAPP

CNRS laboratories and representative offices throughout the world

The CNRS contributes to the influence of French research worldwide through nearly 80 international laboratories and 11 representative offices abroad.

Representative offices **X Number of laboratories located abroad by country**

Source : DEI 2024

Addresses of the offices:

Brussels
European Union
https://international.cnrs.fr/bureau-de-bruxelles/
dei-bruxelles@cnrs.fr

Beijing
China
https://bejing.office.cnrs.fr/
dei-bejing@cnrs.fr

Tokyo
Japan, Korea, Taiwan
https://tokyo.office.cnrs.fr/
dei-tokyo@cnrs.fr

Melbourne
Oceania
https://melbourne.office.cnrs.fr/
dei-melbourne@cnrs.fr

Pretoria
Southern Africa
https://www.ird.fr/afrique-australe-IRD-CNRS-CIRAD
dei-pretoria@cnrs.fr

Washington DC
USA, Mexico
https://washington.office.cnrs.fr/
dei-washington@cnrs.fr

São Paulo
South America
https://sao-paulo.office.cnrs.fr/
dei-sao-paulo@cnrs.fr

Nairobi
East, West and Central Africa
https://international.cnrs.fr/bureau-de-nairobi/
benoit.hazard@cnrs.fr

New Delhi
India
https://india.cnrs.fr/
dei-newdelhi@cnrs.fr

Singapore
ASEAN
https://singapore.office.cnrs.fr/
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https://ottawa.office.cnrs.fr/
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