

GENOPOLE

INNOVATION TODAY, EVERY DAY



ANNUAL REPORT

2024

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Editorials

2024: An outstanding year!

Now more than 20 years in to Genopole's existence, I'm proud to share our biocluster's accomplishments and ambitions with you. The year was notable for significant advancements that reinforced our position as a reference in biotechnologies and fortified our commitment to scientific and collective excellence.

Thanks to the work done by our teams, 2024 passed many milestones for structuring projects:

- **Strengthening academics:**

Genopole signed a convention with Paris-Saclay University, twelfth in the Shanghai Ranking and first in Continental Europe, to affirm our place at the heart of a world-leading science and education ecosystem.

- **New infrastructures for the future:**

The launch of Protopia and Phase 1 of the biofoundry (GATEX) open new possibilities for supporting innovation and the scale-up of our start-ups and research units.

- **Entrepreneurial excellence:**

Four of our start-ups: endogene.bio, CGenetix, bYoRNA and Fungu'it, were laureates of the 2024 i-Lab competition. That accomplishment reflects the quality of our accompaniment and that of the incubated projects.

- **eHealth:**

With D4Medtech, a project for combatting diabetes selected by the *Tiers-Lieux d'Expérimentation* call for projects in eHealth, we are playing key roles in the national France 2030 strategy and in the acceleration of medical innovation.

This dynamic continued to grow at the end of the year with the strategic deliberation underway, involving teams from the Île-de-France Administrative Region, the Ministry of Higher Education and Research and Genopole, that should enable the nine-year renewal of our constitutive convention in February 2026 and the repositioning of Genopole.

Our course is clear: make Genopole a gold-standard hub for excellence, in association with all its research partners: University of Évry-Paris Saclay, Paris-Saclay University, CEA, Inserm, AFM-Téléthron and the South Île-de-France Medical Center (CHSF).

In other developments the GIP and SEM teams continue their shared work to improve the biocluster's ability to respond to the needs of its actors.

— ***Together, we have the ability to write a new chapter in biotech innovation and continue shaping a sustainable future for all.***

I wish to express my profound gratitude to the Île-de-France Administrative Region, the Ministry of Higher Education and Research, the AFM-Téléthron, the Grand Paris Sud Urban Area and the Essonne Administrative Department for their unwavering support. Their commitment is an essential lever for making our projects real and developing our innovation ecosystem, which, moreover, allows us to develop high-quality employment for the citizens of our territory.

To all: be audacious, be demanding and be united. Together, we have the ability to write a new chapter in biotech innovation and continue shaping a sustainable future for all.

With my heartfelt thanks,

Stéphane Beaudet
President of Genopole



Between transition and continuity, year 2024 was dense and fruitful

Within the perspective of shaping the renewal of the GIP, several studies were launched to characterize Genopole's significance. They included an analysis on socioeconomic and scientific outcomes, another on publications driven by the Genopole ecosystem, and a reflection on the organizations around us and their functions, all to inspire us, and provide us with a larger picture.

These studies provided the GIP teams with not only a better view, but also the certitude that choices have to be made for an environment where Genopole appears original, renowned and impactful for businesses and laboratories.

The GIP renewal process was then set underway, with the constitution of an *ad hoc* evaluation commission, which provided its report in early 2025.

The entirety of that period was very rich, generating many debates in-house, to challenge ideas and ultimately provide ourselves with a collective and clear vision of the major orientations to pursue. At the same time, Genopole continued to position itself at the vanguard of innovation and progress in biotechnologies.

Our current position as an indispensable gold-standard for biotechnologies was attained not only through excellence in research but also thanks to our programs for accompaniment and the dedication of our teams. Their work, in partnership with SEM Genopole, enabled the deployment of two new infrastructures, GATEX and Protopia, both of which will allow us to better accompany start-ups, laboratories and businesses looking to develop and validate demonstration capacities for their innovations. This positions Genopole for supporting industrial scale-up and demonstration, both a part of the continuum between scientific proof of concept and industrial deployment of an innovation. Genopole's internal competencies were incremented to ensure the operation of these new structures. Providing accompaniment for the risks innate to any entrepreneurial project remains a core aspect of the activities of all of the GIP's teams.

Our current position as an indispensable gold-standard for biotechnologies was attained not only through excellence in research but also thanks to our programs for accompaniment and the dedication of our teams.

In that same vein, to accompany demonstration capacities, Genopole's project managers developed a *Tiers-Lieux d'Expérimentation* project for eHealth, which was validated in December 2024. That project's purpose is to validate a digital innovation in health. It involves a partnership with the CHSF and other institutions, centered initially on diabetes but destined to expand in scope.

These examples illustrate perfectly how Genopole's dynamically evolving programs and projects bring significant competitive advantages to researchers and entrepreneurs. Indeed, Genopole offers these latter not only a state of the art technological environment but also a singularity that makes them stand out in a constantly evolving scientific landscape.

Gilles Trystram
Chief Executive of Genopole

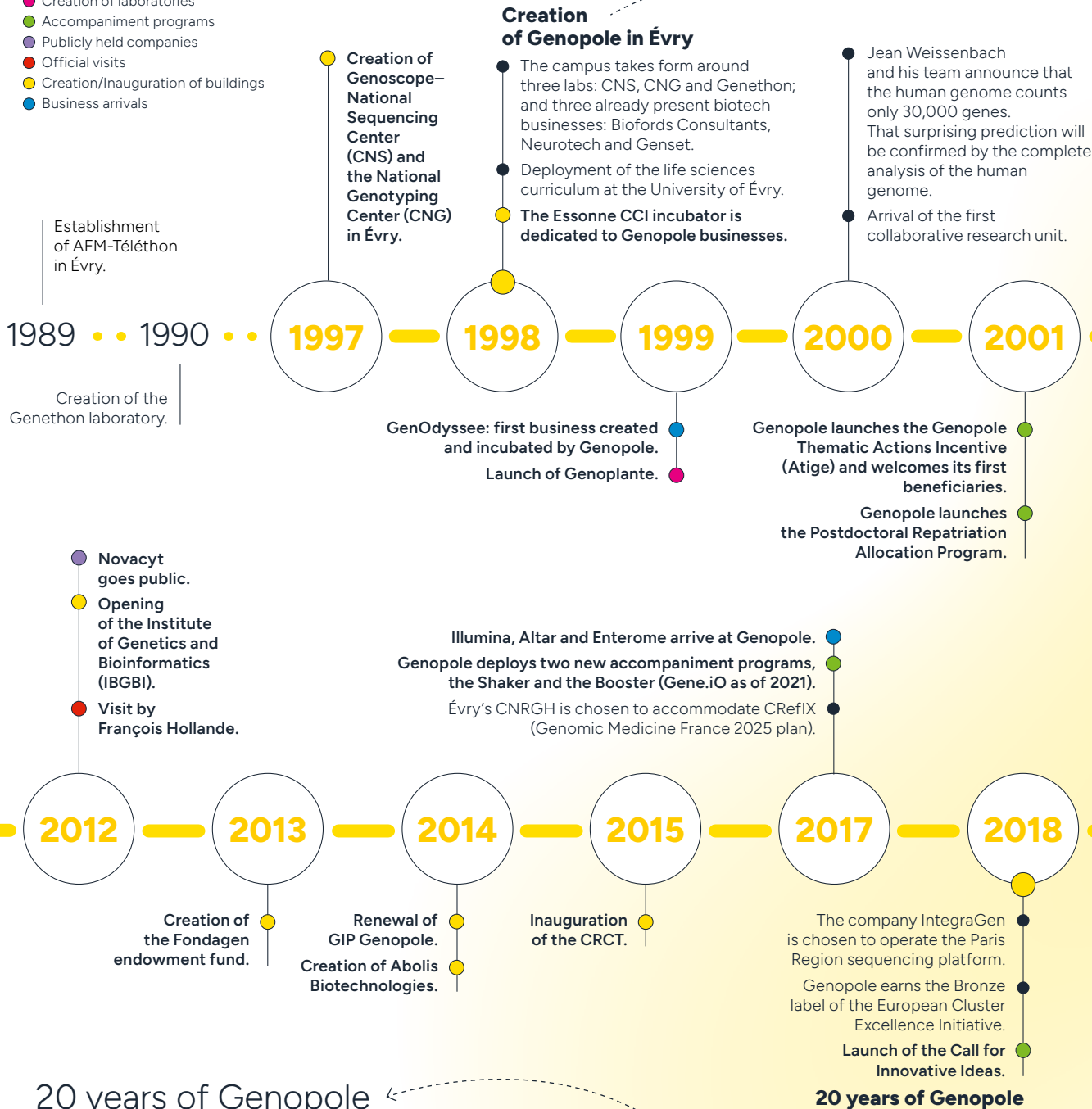


History

25 years of Genopole

Legend:

- Creation of laboratories
- Accompaniment programs
- Publicly held companies
- Official visits
- Creation/Inauguration of buildings
- Business arrivals



6 academic
research
laboratories

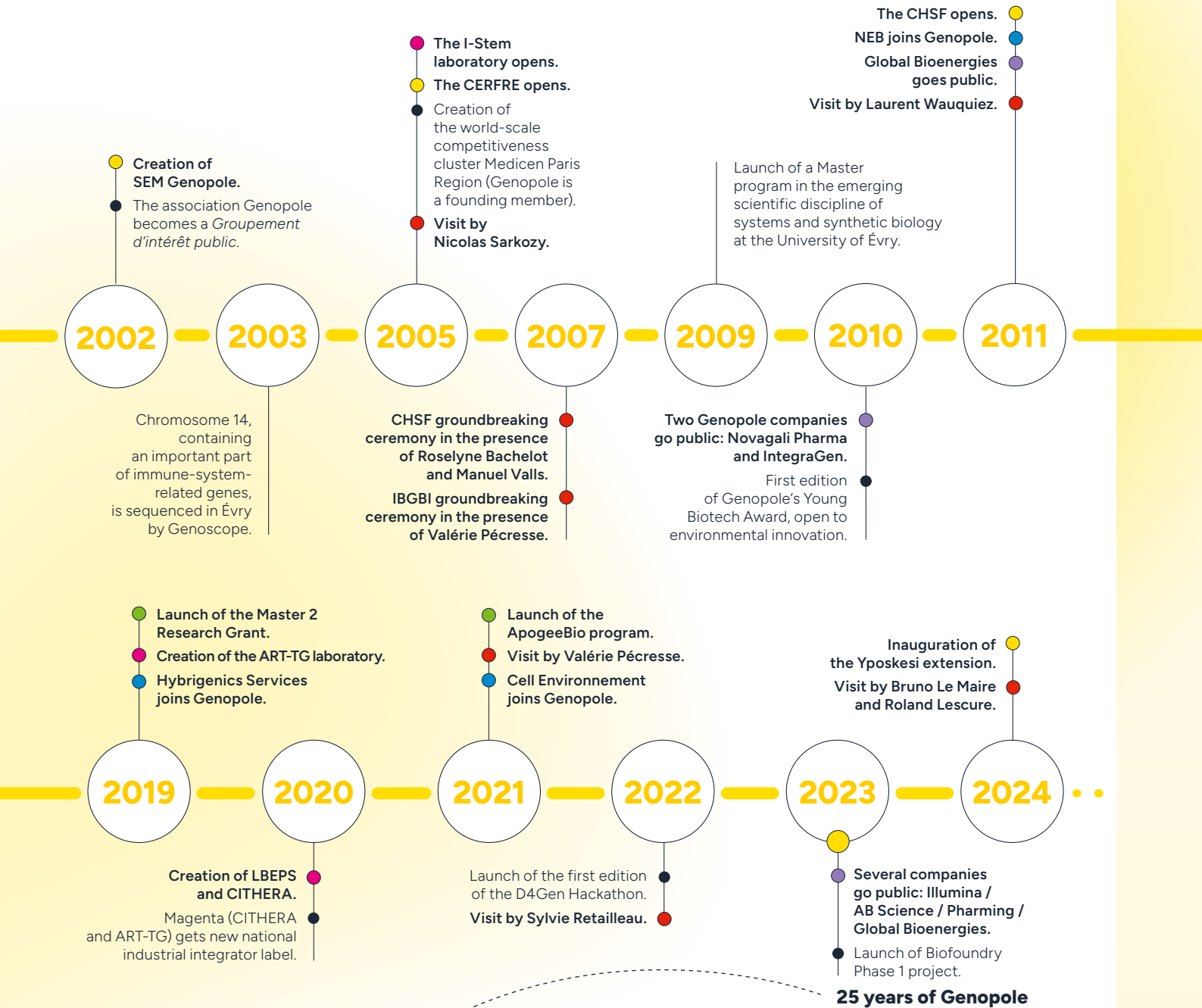
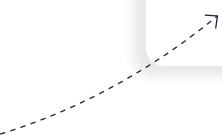
2,413 people
at the biocluster

Creation of Genopole



3 academic
research
laboratories

724 people
at the biocluster



25 years of Genopole

66 businesses
including 11 new
in 2023

2,804 people
at the biocluster

24 shared-use
platforms and
infrastructures

Key figures¹

→ Total workforce²

2,933 people



1,013
labs and platforms
personnel

1,592
business personnel

328
administrative
and other personnel

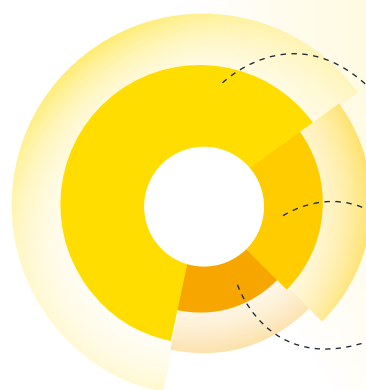
In 2024:

117 structures

78 businesses
including 2 service
and training structures:
Biosupport and IMT

16 academic
laboratories

23 shared-use platforms
and infrastructures



2 strategic research sectors

Therapeutic innovations

43 businesses — **4** academic laboratories — **17** shared-use platforms and infrastructures



The bioeconomy

33 businesses — **3** shared-use platforms and infrastructures



→ Infrastructure mutualization

23 platforms mutualized for the entire scientific community

13

technological
platforms

3

informatics
and programs
platforms

4

ancillary services
suites available
to building workers

2

infrastructures

¹ For more information see Key Figures 2024.

² Excluding CHSF.

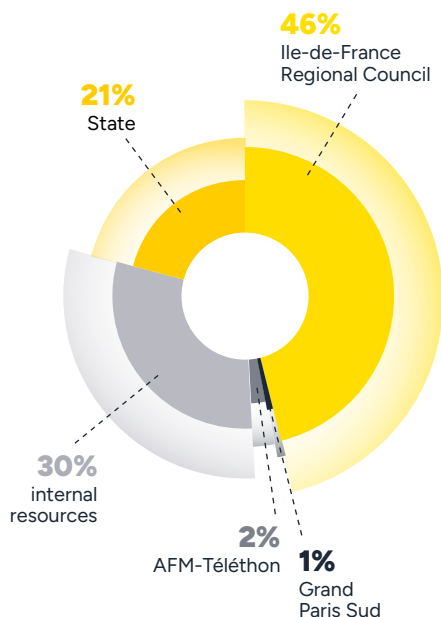
Budget

Covering both investments and operating costs, Genopole's 2024 budget was €15 million. Public collectivities contributed **67%** of the total budget. Among them, the Île-de-France Administrative Region was the primary source, providing **€7 million** or **46%** of the total budget. **49%** of the budget went to investments and **51%** to operations. The French State, via the Ministry of Higher Education and Research, contributed **€3 million**, i.e., **26%** of the GIP's operating budget.

Genopole itself generated **€4.2 million** in resources, thus contributing significantly to its own operating budget. That number comprises **€2.5 million** from Cerfe, illustrating the biocluster's capacities for financing its own development.

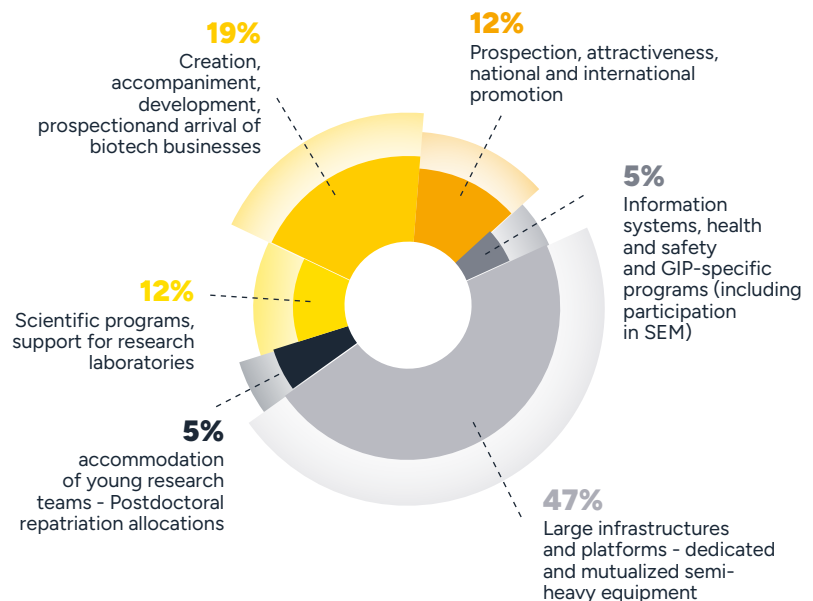
The largest part of the budget went to Genopole's technological platforms (**47%**), which are made available to the biocluster's public and private researchers on a shared-use model. These platforms are essential for Genopole's positioning: they represent a major asset for research and thus contribute strongly to the biocluster's and the region's attractiveness.

→ GIP Genopole resources



→ GIP Genopole expenditures

(operations and investments)



Governance

The *Groupe*ment **d'intérêt public (GIP)**

Genopole is a *Groupe*ment d'intérêt public (GIP), a form of public-private partnership for missions of public interest. It functions thanks to the steadfast commitment of its **12 members**. Genopole is built upon a solid foundation of decision-making bodies and scientific strategy committees that empower its ability to successfully carry out its missions.

The biocluster benefits from the unwavering support of public institutions, notably the French State and the Île-de-France Regional Council. These precious partners provide consequential funding, which enables investments in and the operation of the shared-use technological platforms, and, in turn, innovation and cutting-edge research.

GIP Genopole General Meeting

The General Meeting is composed of representatives from each member institution (see page 47). It is the GIP's administrative body and makes all the main decisions concerning it, such as its strategic orientations, annual activities program and budget. The General Meeting carries out elections for the presidential and vice-presidential posts and also deliberates nominations to the Committee for Science, Innovation and Industry (CSII).



Stéphane Beaudet
President of
the General Meeting



Laure Darcos
Vice-President of
the General Meeting



Committee for Science, Innovation and Industry

The Committee for Science, Innovation and Industry (CSII) is presided by Emmanuelle Quilès and composed of qualified persons with particular competencies in Genopole's fields of activity. Its members are approved by the General Meeting. The role of the CSII is to provide the General Meeting with opinions and recommendations on the scientific and industrial orientations of GIP Genopole. A seat on the CSII is accorded *intuiti personæ*; the members act in strict independence of their affiliations.



Emmanuelle Quilès
President of
the Committee for Science,
Innovation and Industry



Governance

A motivated **team**

GIP Genopole benefits from multidisciplinary teams committed to creating a fertile environment for research and innovation.

Cultivate ties between public and private research.

Our missions

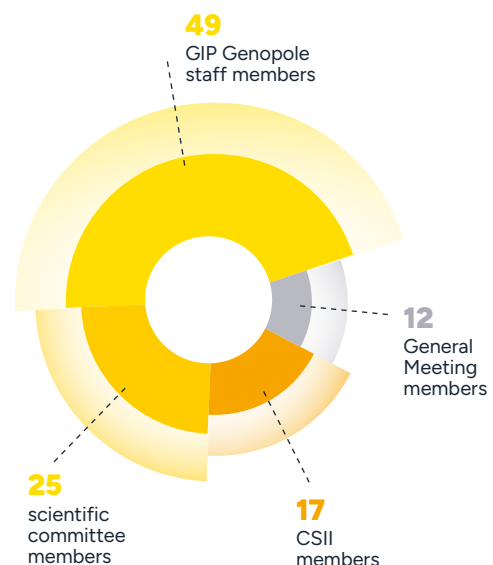
Whether focused on administrative management, research and business, infrastructures and platforms, international affairs or communication, the GIP Genopole teams are all driven by a shared passion: **bring progress to life sciences and enable innovation**. With their commitment, energy and renowned know-how, these teams have made that passion an objective to be reached via their actions to accompany and develop the biocluster's laboratories, start-ups and businesses.

Genopole's scientific committee

The scientific committee was created in 2023 and the GIP continued its work in 2024, including that of its primary objective of enabling a dialog between the biocluster's research units. Composed of representatives from all of the laboratories, the committee continues to play a key role by responding proactively to the needs of public lab-

oratories and private entities. It works to create durable synergies while continuously adapting and enriching the GIP's initiatives. Through the expertise of its members, the committee guides the thought process toward a scientific repositioning that is both strategic and innovative.

Accelerate the growth and development of biotechs and strengthen their presence within the territory.



A dynamic ecosystem nurturing biotech growth

At Genopole, cooperation isn't just a word, it's a work method, a lever for innovation and a motor for growth. Throughout the year and thanks to the concerted actions of GIP and SEM Genopole, the biocluster demonstrated the strength of connections: those made between labs and start-ups, between entrepreneurs and institutional partners, between start-ups and industrial partners.

they request more time to make their decisions, but in so doing, further strengthen the solidity and pertinence of the commitments to come.

In 2024, Genopole reinforced its role as a catalyst for innovation within its ecosystem. At the biocluster, **businesses and laboratories collaborate, advance and develop together** in a synergy-nurturing environment. Year 2024 saw an increase in the number of accompanied businesses, **with a particularly strong dynamic in the bioeconomy sector**, which illustrates its increasing momentum. The biocluster reached a significant mile-marker, as it now counts ten businesses with sales exceeding €4 million.

Genopole acts side-by-side with entrepreneurs to support project development, strengthen structuration, ease access to funding, and create conditions to favor business establishment in the territory.

Nonetheless, **67% of the biocluster's companies have less than ten employees**. That reality makes hands-on accompaniment all the more essential. Genopole acts concretely and side-by-side with entrepreneurs to **support project development, strengthen structuration, ease access to funding, and create conditions to favor business establishment in the territory**. And the results are there: **12 companies enlarged their premises this year**, proof of their growth and fidelity to the biocluster. Many companies laid their business paths at Genopole, such as Abolis, Enalees, DNTech and STH Biotech.

The ecosystem remains healthy, nourished by the emergence of new potentialities. Among 2024's successes are the progression of **Abolis**, the notable fund raising campaigns of **STH Biotech** and **AuralIP** (who met their investors thanks to Genopole) or the creation of **ChromoDiag**, a spin-off resulting from Genopole's programs.

In an era where biotechnologies are becoming strategic elements of industrial and health sovereignty, **Genopole, more than ever, is positioning itself as a catalyst for alliances**, a biocluster able to focus efforts on today's and tomorrow's scientific and societal challenges.



80

biotech businesses
share the Genopole
biocluster

16

academic labs
share the Genopole
biocluster

Close to 80 biotech businesses and 16 academic labs share the Genopole biocluster. Synergies emerge there where competencies meet, in both the health and bioeconomy sectors. In this setting, investors take the time to analyze projects with rigor and discernment. Sometimes

Distinctions, labels and prizes

Accolades confirming the excellence of Genopole companies

Year 2024 illustrated how Genopole-accompanied businesses are able to distinguish themselves in the most-demanding competitions and national calls for proposals.

Of the 12 biocluster companies submitting a dossier for the i-Lab competition, four were awarded the i-Lab label: bYoRNA, CGenetix, endogene.bio and Fungu'it.

Three other Genopole companies convinced deciders in France 2030 calls for proposals, thus obtaining structuring support for their development: Adlin, Nutropy

and ChromoDiag. These achievements demonstrate **the solidity of the projects** forwarded by Genopole companies and the innovation potential of these latter. They also attest to **the quality of Genopole's accompaniment** upstream of dossier submissions, aimed at guarantying future success.



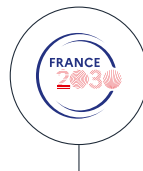
A closer look... 4 laureates



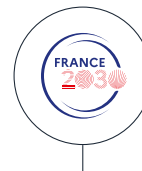
endogene.bio has developed a technological platform to accelerate the identification of molecular biomarkers with the aim of refining diagnostics, better stratifying patients and optimizing key steps in novel therapeutics research.



bYoRNA is developing advanced bioengineering technologies for messenger RNAs to improve gene therapies and vaccines. Its i-Lab project valorized an innovative production technology.



ChromoDiag is a spin-off of Cell Environment, a beneficiary of Genopole programs. A France 2030 laureate, ChromoDiag is advancing a chromatin-based diagnostic technology for personalized therapies.



Nutropy develops sustainable cheese substitutes from precision fermented proteins. Their impactful project received France 2030 support in 2024.

Genopole and businesses

Genopole strengthens its primordial role in biotech innovation through its accompaniment programs: Shaker, Gene.iO and Upscale Bio. With them, it empowers all steps, from the idea to the start-up, from acceleration to upscaling, and through to the preindustrialization of the biotech.



Genopole and businesses

From the idea to industrialization: Genopole adds a link to its biotech accompaniment chain in 2024

With the Shaker, Gene.iO and the newly-launched Upscale Bio, Genopole confirms its role in the emergence, acceleration and upscaling of innovative start-ups in health and the bioeconomy.



From the idea to the start-up

Since 2017, **74 projects** have participated in the Shaker program, 45 of which became biotechs. In 2024, **seven new projects** participated in it. Of all the ideas nurtured since the program's creation, **61% led to the creation of a business**.

Of these latter, **38% continued their development** in the Gene.iO acceleration program.

To get their innovation through the goalposts, the future entrepreneurs receive support from biocluster teams at every step.



Shaker – Bringing biotech ideas to life

The Shaker is the starting point for holders of innovative biotechnological projects. The early incubation program is intended for researchers, students, engineers or entrepreneurs aiming to show proof of concept for their ideas.

- Access to labs, scientific and entrepreneurial coaching and immersion in the Genopole ecosystem.
- Since 2017: 74 accompanied projects, 45 resulting start-ups.





Gene.iO: an amplifying dynamic of acceleration

In 2024, having **already accelerated 30 start-ups** across four yearly classes, the Gene.iO program saw the addition of:

- two new Strategy Packs (iLab and Preindustrialization);
- and five new mentors bringing the total number of mobilizable mentors up to 16.

In 2024, the Gene.iO prodigies raised a mean of €1.3 million Series A funding for a total of more than €9 million in obtained public and private funds:

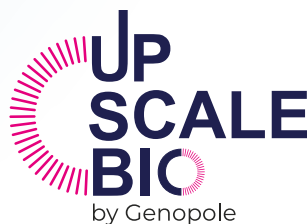
- €7 million raised from investors;
- €2 million in public funding (Bpifrance, grants, etc.);
- €600 thousand in private funds (unsecured loans, banks, etc.);
- 52 jobs created, including 34 at the biocluster and 18 in the rest of Île-de-France.



Gene.iO – Accelerating the development of start-ups

Gene.iO is Genopole's acceleration program conceived to help biotech start-ups structure their growth and successfully carry out their first Series A funding campaigns.

- Strategic accompaniment over 12 months, mentoring, targeted Strategy Packs, (iLab, preindustrialization, etc.), access to investors.
- Since 2022, 30 start-ups accelerated, cumulative €39 million raised, average of €1.3 million in Series A funding.



Upscale Bio : a new offer dedicated to industrial scale-up

Launched in late 2024, Upscale Bio is a new Genopole program dedicated to biotech start-ups ready to move on from their proof of concept to industrial and commercial upscaling.

Conceived with input from around 15 of the site's start-ups, the program comprises three strategic pillars:

- **Funding:** to structure ambitious and targeted campaigns;
- **Business & communication:** to strengthen marketing strategies and visibility;
- **Science & technology:** to consolidate the R&D brickwork and accompany preindustrialization.

The modular (membership or à la carte) program Upscale Bio has already convinced 10 of the 24 targeted biocluster companies, and moreover gone national thanks to partner incubators in Dijon, Nice and Nantes.

Its objective: ensure the emergence of future biotech businesses.



16

mobilizable mentors, including five new ones in 2024 for Gene.iO.

€39

million in funds raised by Gene.iO start-ups.

24

targeted companies for the new Upscale Bio offer.



Start-ups in focus: 2024, a year of solidification

5h45

5h45 is a new start-up in the bioeconomy sector developing a polymer for the cosmetics industry and aiming for industrialization in 2026. Originally in Israel, the company transferred to France, setting up its activities at Genopole.

5h45's technology is initially aiming to be an alternative to Brazilian hair straightening, but their polymer may also find wider applications in other markets. The objective is industrialization of the technology in the next two years to bring a new reference solution to the market.

**Industrialization
of the technology
in the next two years
to bring a new reference
solution to the market.**

BioTissue

Coming from Switzerland, BioTissue created its affiliate at Genopole to launch production of a knee cartilage substitute and achieve its strategy of international accreditation.

The business is developing a technology to replace damaged knee cartilage with a polymer, thus bringing a solution for the health of "old knees" to the market. The

objective is to produce the technology at large-scales for different markets in Europe and the United States.

Enalees raises €15 million to speed industrialization

Enalees, a specialist in rapid veterinary diagnostics, raised €15 million in Series A funding thanks to the participation of the SPI 2 investment fund (managed for the French State by Bpifrance as a part of France 2030) and to that of historic investors.

Enalees's ambition is to build a facility able to extend its PCR test manufacturing capacities to 4 million units per year. Currently focused on pet-oriented (dogs, cats, horses) tests, which the company seeks to market in North America, Enalees is also aiming to extend its activities to the porcine, bovine, ovine and poultry livestock markets.

Ramping up despite a challenging context

Whereas certain health companies are experiencing contraction (-25% in sales for highly affected companies), those in the bioeconomy are seeing new perspectives. In 2024:

- About ten of the biocluster's companies attained the bar of €4 million in sales;
- 12 requests for larger premises were received, confirming a strong territorial anchorage;
- despite an apparent reduction in fund raising, the appraisal for 2024 remains positive.

€4

million in sales
for about ten
biocluster companies.

12

premises extension
requests received.

Genopole and businesses

Cell Environment: detection of age-related DNA damage

Cell Environment develops next generation cytogenetics tools for the early detection, diagnosis and stratification of a range of pathologies, notably cancer.

Present at Genopole since 2016 and within the SEM facilities for the last two years, Cell Environment is a start-up specialized in detecting DNA damage, not only in unique but also in repetitive sequences such as telomeres and centromeres. The company's activity is focused on developing diagnostics for cancers and premature aging disorders. Cell Environment was created in 2016 by its current chief executive officer, Dr. Radhia M'kacher, PhD-HDR, after 20 years of academic research. Her company enables the transfer of novel automated quantification technologies for telomeres (markers of aging), centromeres and chromosomal abnormalities to routine clinical practice. *"The technology was validated and patented in 2018. Since then, we've made progress in our understanding of the role of repetitive sequences, not only in disease but also in treatment response,"* underlines Dr. Radhia M'kacher.

Today, the work done by Cell Environment is advancing on two axes: the standardization of this new automated technology and the identification of new biomarkers in clinical cohorts, particularly for the early detection of several pathologies. The first, key products resulting from the company's innovation are *in vitro* diagnostics and three analysis programs accessible via a cloud-based platform.

Biomarkers to better target patients

As concerns research, Cell Environment was a laureate of the RHU (university hospital research) call for proposals for lung cancer. In that setting, the analysis of telomeres and associated abnormalities may be able to predict immunotherapy response. *"Our hope is to develop biomarkers that will allow us to predict if any one patient is eligible for immunotherapy instead of standardized treatments. We are working with the Gustave Roussy Hospital to conduct the study, under the sponsorship of Professor Benjamin Besse, a medical oncologist specialized in the management of thoracic cancers and the head of clinical research at Gustave Roussy,"* explains Dr. M'kacher.

A second major project developed as part of France 2030 and scheduled for completion in September 2025 is the automation of cytogenetic analyses and the online deployment of the company's digital platform. *"We're launching a third state-supported project, carried*

To increase the chances of recovery, we've made important breakthroughs in both the automation and simplification of cytogenetic analyses to ensure that our biomarkers can be used easily in medical biology labs.





out with an AP-HP analysis platform, for the real-time clinical validation of our technology,” announced Dr. M’kacher.

Cell Environment is also involved in several academic research programs aimed at establishing a better understanding of the role of premature aging in the development, progression and complication of pathologies. Two CIFRE theses are underway, 25 articles have been published in high-impact journals over the last few years, and two patents are currently being filed.

Setting the sights on marketing

“Being in a SEM Genopole lab is an undeniable advantage in terms of space and for facilitating and fluidifying interactions with other biocluster teams, not to mention benefiting from Genopole’s international aura. When we have particular needs, we generally get what we ask for, which greatly simplifies our work. Thanks to Genopole, I was able to participate in several national and international trade fairs and events, for example Arab Health (UAE) or the visit to Research Triangle Park (North Carolina, USA). We are considering an affiliate in Dubai to complement our French presence,” states the start-up’s CEO.

Currently, Cell Environnement is moving into the industrialization and commercialization phase for its process. The company is looking for kit distribution partners and market deployment funds. “Over the coming years, our ambition is to obtain the certification needed for national healthcare insurance reimbursements, and thereafter

Today, the company is considering an affiliate in Dubai to complement its French presence.

to develop novel techniques and age-related biomarkers for other pathologies such as liver cancer. We’re developing an innovative and automated cytogenetic-genomic approach on very low-volume samples. It allows us to cross the quantification of telomeres with the detection of chromosomal abnormalities and markers of chromosome instability,” explains Dr. M’kacher. The company’s ultimate goal is to become an indispensable actor in the detection of DNA damage associated with premature aging.

25

articles published in high-impact journals.

2016

year the company was founded.



Genopole and businesses

Abolis reaches strategic milestone with €35 million raised to industrialize its synthetic biology technology

Located at Genopole since its creation in 2014, Abolis Biotechnologies has reached a decisive milestone in its development. The company raised €35 million in September 2024 via a consortium of influential industrials and investors. The operation strengthens its position as a gold-standard actor in industrial biotechnologies for more sustainable manufacturing.

This major success for the still-young company testifies to the pertinence of its innovation, which brings effective responses to market needs. Indeed, the industrial sector is looking for new processes to enable its green transition. Thereto, Abolis proposes the biological production of molecules of interest, including raw materials, intermediates and active compounds, previously attainable only through fossil resources.

Its disruptive innovation combines synthetic biology, informatics, robotics and other technologies. Their synergistic approach enables the design of microorganisms able

to produce compounds of interest via fermentation. One of Abolis's major advantages is its ability to respond to the needs of a wide range of sectors: health, cosmetics, food, chemistry, and more.

"We are very happy with this operation, carried out with renowned industrial partners and impactful, industry-oriented investors," stated Abolis Founder and President Cyrille Pauthenier. "With this strategic financing, we will be able to pursue our strategy for international growth and to strengthen our position as a European leader in the fields of industrial biotechnology and microbiome applications."

55

people
in the Abolis team.

Continuously advancing growth

With his colleague Valérie Brunel, Cyrille Pauthenier currently heads a team of 55 people.

Abolis's ten-year history has been exemplary. The concept that would become Abolis won the Technological Potential Prize in the 2013 edition of the Genopole Young Biotech Awards, and Cyrille Pauthenier created the company the following year, when he was 26 years old and a PhD student at the Institute of Systems & Synthetic Biology, located at Genopole. Abolis set up shop at the biocluster in SEM Genopole facilities and has expanded its offices and laboratories there as the company's needs and successes have grown.

"It's important for heads of businesses to find good accommodations that let them project and grow steadily and serenely while remaining focused on the core activity," underlined Abolis General Manager Valérie Brunel in 2022.

With this new €35 million in financing, Abolis will develop its own products and deploy its services for biomanufacturing and microbiomes.

Today, the company occupies 1,600 m² of premises and intends to double that through real estate programs underway at Genopole. Partnerships with the groups Bel and Lesaffre, and in 2019 with L'Oréal, strongly contributed to the growth of Abolis, this latter successfully navigating several technical turning points in its objectives for the production of biosourced compounds.

Thanks to the €35 million in financing, Abolis has taken yet another step in the acceleration and development of its products and services in biomanufacturing and microbiomes. The new resources will allow the company to strengthen its R&D and advance its international expansion. Abolis has a prestigious consortium at its side, both companies like L'Oréal and Evonik GmbH, and specialized international funders like



At home at Genopole

Abolis's history was written page-by-page at the Genopole biocluster.

Since its victory in the 2013 Genopole Young Biotech Awards, Abolis has advanced marvelously well. Today, the Abolis team, codirected by Cyrille Pauthenier and Valérie Brunel, counts 55 members.

The company's office and lab space were able to adapt to each step in its growth thanks to Genopole's flexible real estate accompaniment. *"It's important for heads of businesses to find good accommodations that let them project and grow serenely,"* confided Valérie Brunel in 2022. Currently occupying 1,600 m² of floorspace, the company is planning to double that number through programs under development at Genopole.

ABOLIS
WHAT LIFE CAN DO

DeepTech & Climate Fonds (Germany), Clay Capital (Singapore), ICOS Capital (Netherlands) and Liberset (United States).

In addition to their participation in the fund raising campaign, L'Oréal and Evonik GmbH also signed a tripartite agreement with Abolis for the development of strategic projects ranging from innovation to commercialization in the fields of health, nutrition, cosmetics and chemistry.

"This investment underlines our belief in Abolis's potential for the development of more-sustainable solutions across diverse industries, including beauty. We are excited to pursue our partnership with Abolis's talented team to develop the company's growth and future successes," commented in the press release Samantha Etienne, head of L'Oréal's venture capital fund BOLD.

Abolis is thus unfolding its roadmap for the coming years and confirming its role as an indispensable partner for industrials motivated by an ambition for more sustainable production models, and, more largely, confirming the immense potential of biotechnologies to empower this change of direction for industry.

€35
million in funding
raised by Abolis.

1,600 M²
of floorspace
for the company
currently.

Portrait of an entrepreneur

From the hospital to the start-up: medical innovations taking wing thanks to a structuring ecosystem

Dr. Mohanad Mahfoud, a cardiac electrophysiologist at the CHSF, has never disassociated care from innovation. Convinced that technology can improve patient care, he has, for several years now, called upon the Genopole ecosystem to transform his ideas into concrete solutions.

It all started with Genopole's **Call for Innovative Ideas**. Now a multi-laureate of the call, Dr. Mahfoud has developed two projects merging AI and medical imaging:

- VR My Heart, a virtual reality prototype for navigating within a specific patient's heart.
- AI AutoHeart Segment, a semi-automated tool for the treatment of preoperative images.

His projects led him to participate twice in the **D4Gen Hackathon (AI & health)** where he mined the collective intelligence of teams comprising engineers, research-

ers and data scientists. The Hackathon was a chance to take on cutting-edge subjects like the early detection of strokes or the creation of the FAIR database for rare cardiac arrhythmias.

In 2023, he joined the **Shaker** program to validate the technological, regulatory and economic basis of his project. The program was a shift for the physician: In 2024, he founded the start-up **VRAI-Heart** aimed at developing digital twins of hearts to optimize cardiological interventions.

He went on to join the Gene.iO program in January 2025 with the aims of raising funds for VRAI-Heart and defining its commercial structuration with the objective of commercialization within three years.

Dr. Mahfoud's story illustrates the power of Genopole accompaniment: a unique continuum between detection, maturation, and acceleration designed to help caregivers become entrepreneurs able to impulse novel solutions to change the lives of patients.

Biography



Dr. Mohanad Mahfoud is a cardiac electrophysiologist at the South Île-de-France Medical Center (CHSF) since 2013. He carried out his cardiology residency within the AP-HP and completed complementary training in leadership, innovation, medical cost-effectiveness and social impact between 2016 and 2018 within a European Heart Agency program in Maastricht. His passion for innovation and technologies for health led him to explore a range of projects involving robotics, signal & imaging processing and artificial intelligence.



Partnerships

Genopole and IncubAlliance strengthen their partnership to boost deeptech start-ups

To continue reinforcing ties with Paris-Saclay, Genopole and IncubAlliance have taken another step together to codevelop an accompaniment program for deeptech start-ups. With a number of proven partnerships between them already—project evaluations, health coaching, shared workshops—the two actors are merging their competencies again to build a structuring itinerary, from incubation through to preindustrialization. Reinforcing ties in this manner is part of a shared dynamic between Paris-Saclay University and Genopole and their shared and clearly defined objective of accelerating the creation of innovative businesses and giving these latter the means to grow in Île-de-France. This new partnership was launched in the second quarter of 2024 with the co-accompaniment of the start-up Mycelium Technologies.



Mycelium Technologies: co-accompaniment for success

As the first start-up to benefit from the co-accompaniment developed by Genopole and IncubAlliance, Mycelium Technologies embodies the potential of synergies between biotechnologies and deeptech innovation. Working with a sustainable and circular philosophy, the



start-up is developing new foods from mycelium, a bio-sourced product with a range of applications.

Through the unprecedented co-incubation, Mycelium Technologies will benefit from reinforced accompaniment for three key aspects:

- **market access**, with substantive work on strategic positioning for the offer;
- **financing**, via the identification of dilutive and non-dilutive mechanisms;
- **industrialization**, with the creation of a roadmap integrating technical, regulatory and quality issues.

This close partnership between Genopole and IncubAlliance teams will optimize the entrepreneurial pathway and strengthen ties with the Paris-Saclay ecosystem. The dynamic also aims to diversify sources of innovative projects and consolidate economic models for public incubation.

Mycelium Technologies embodies the potential of synergies between biotechnologies and deeptech innovation.

success stories

Genopole and investors

3 questions for...

Élodie Panier

Founder and head of Calyseed

The investment company headed by Élodie Panier finances the development of innovative life sciences start-ups at the seed level then accompanies them up to their next series of funding.



What are your ties with the Genopole teams?

Élodie Panier: Our biocluster contacts maintain relations with an ecosystem that includes actors in start-up funding, acting at its earliest stages. The Genopole teams ease relationship-building during the initial encounters with founders of start-ups we're considering investing in. They help us by supplying a knowing view on the project and/or by explaining the accompaniment already provided in the past. We verify that the life sciences or health start-ups that we invest in correspond well to Calyseed's positioning, that is, interventions very early in the project via seed or pre-seed funding. Our minimum is around €100,000 and we intervene in rounds usually from €400,000 to €1 million in association with other co-investors. We are veritable investor

"Genopole teams ease relationship-building with the founders of start-ups."

partners: we are active in governance, share strategic ideas, participate in roadmap deployment, provide counseling and associate our network and ecosystem within which we have been active for more than 25 years.

Which Genopole start-ups have drawn your attention?

É. P.: We've invested in CGenetix, currently at the biocluster's incubator. The company develops Class C in vitro diagnostic tests to quantify post-transplant organ lesions via a blood sample. We also took an equity stake in STH Biotech, a company developing the therapeutic and cosmetic potential of rare cannabinoids through a plant-based biotechnology.

And any other long-term projects?

É. P.: By keeping an eye on the deployment of the strategic roadmaps of start-ups, we help them overcome obstacles and make sure they reach key mile markers defined for future funding rounds (seed or Series A). For each start-up in our portfolio, we define a period during which it may interest an industrial either to purchase or to establish a key partnership, which gives us an «exit ramp» in the jargon.



Portrait of an entrepreneur

NEB: 50 years of innovation for life sciences

Founded by researchers for researchers in 1974, New England Biolabs (NEB) celebrated 50 years of molecular biology services in September 2024. As a pioneer in the marketing of restriction enzymes for recombinant DNA technologies, NEB is as much the benchmark for services to industrial applications as it is to basic research.

Under the direction of Éric Beguec, NEB remains true to its roots and pursues an ambitious R&D policy that, today, gives the company the ability to offer a wide range of solutions: RNA synthesis, high throughput sequencing (NGS), genome editing, glycoproteomics and more. NEB also develops GMP¹-grade enzymes for use in the production of vaccines (notably against COVID-19) or the development of molecular diagnostics kits.

A strategic presence at Genopole since 2011

NEB set up shop within SEM facilities at Genopole in 2011, and every day since, the company strengthens its ties with French biotechs, putting its 50 years of scientific expertise into motion to accompany their projects, wherever they may lie in the research-to-industrialization spectrum. This local involvement is part of NEB's desire to establish solid connections with innovative ecosystems, particularly in the dynamic context of the Île-de-France Region.

NEB puts its half a century's worth of scientific expertise into motion to accompany projects, wherever they may lie in the research-to-industrialization spectrum.

NEB remains a private and independent company, and thus free from short-term financial logic. With only three CEOs in 50 years, low employee turnover, and renowned client services, the company stands out for its authenticity.

¹ Good manufacturing practices.

Its founding values: a passion for science, humility, and commitment, remain to this day at the heart of the company's culture.

NEB is preparing its future serenely: migration to SAP in 2026 and a move to French business leadership in 2027 while continuing to invest in future-oriented sectors like lyophilization.

A responsible, B Corp™ certified company

As a pioneer also in social and societal responsibility, NEB obtained B Corp™ certification in 2021. The company acts concretely to diminish the environmental impact of its activities: reducing plastics in its kits, using environmentally responsible packaging and supporting biodiversity projects via the NEB Foundation.

50 years of passion for science!



Genopole research and platforms

Genopole accompanies and stimulates innovation in public and private research via the biocluster's shared-use, state of the art technological equipment and the competencies that go with them—called “platforms” in Genopole parlance. Benefiting from dedicated funding, the objectives of the platforms are to attract the best talent, support high-potential projects and accelerate industrial transfer.





Genopole platforms and infrastructures

GATE^x: biomanufacturing to scale

In 2024, Genopole reached a new strategic milestone with the launch of GATE^x, a preindustrial biomanufacturing platform meant to accompany biotech start-ups as they pass through the scale-up stage, one of the most critical in their development. Operated entirely by Genopole, this infrastructure, the first of its kind in Île-de-France, is designed to validate strain robustness, refine fermentation processes and prepare businesses for industrialization under rigorous technical conditions.

GATE^x, for “grow and test” plus an exponent “x” to symbolize increases in volume, embodies a true passageway—a “gate” thus—between laboratory R&D and industrial production. By giving start-ups access to state of the art fermentation equipment, and in so doing, sparing them from heavy early investments, GATE^x eases the structuration of their projects upstream of scale-up.

Since April 2024, the platform’s equipment has grown to offer a complete technical itinerary:

- A **culture media preparation lab** compatible with industrial ingredients.
- A **bacteria or yeast preculture room**, for reproducible preliminary cultures.
- A **high-throughput screening lab** equipped with an automated pipetting system and a Biolector XT microfermentor able to test up to 960 culture conditions.
- A **progressive upscaling workshop** with Multifors 2, Biostat B (2–5 liters) and Biostat C Plus (up to 20 liters) fermentors

The first company to use the service was Nutropy, a specialist in precision fer-

mentation derived dairy alternatives. For Nutropy Cofounder and CSO Maya Bendifallah, “The equipment at GATE^x responds perfectly to our needs. We are satisfied with both the service and quality and reliability of the materials.”

With €820,000 in support from the Île-de-France Administrative Region, GATE^x has launched its first, 70 m² phase. Going forward, the project has set the objective of reaching capacities of several hundred liters by 2027. Its multi-sector positioning—health, food & agriculture, cosmetics—reflects the range and upscaling needs of biotechs using precision fermentation. Whether start-up, SME, small cap or research center, the platform is open to all, either occasionally or in the setting of strategic accompaniment.

For the innovation ecosystem, GATE^x is a key element aimed at **ensuring a successful move from proof of concept to industrialization** and moreover setting the foundations for a more agile, rapid and sustainable biomanufacturing sector in France.

960

culture conditions
can be tested by the lab.

€820m

amount of support
provided by the Île-de-France Region for GATE^x
(in addition to the **€2.280 million invested in 2022**).

Genopole platforms and infrastructures

Protopia : formulating the future of biotechs

On the subject of novel infrastructures at Genopole, there is not only GATE^x for upscaling but also Protopia for the formulation of finished products. Protopia serves the food & agriculture, cosmetics and health nutrition sectors and was conceived for precision fermentation start-ups seeking to transform a biotech ingredient into a concrete prototype, ready to be tested, evaluated and adapted for its final use.

Whereas GATE^x responds to robustness and upscaling challenges, **Protopia intervenes further downstream**, when the time has come to translate **an innovative ingredient into a marketable product**. The name of the platform is a reference to the protopia concept developed by the author Kevin Kelly. He used protopia to describe **a realistic and pragmatic future of day-to-day, progressive improvement**. A description particularly pertinent to the cycles of innovation in biotechnologies.

Protopia intervenes downstream of GATE^x, when the time comes to translate an innovative ingredient into a marketable product.

Start-ups can access Protopia without initial investments for occasional or strategic periods of work. There, they benefit from:

- **Platforms for analytics and formulation** to evaluate textures, flavors, odors, efficacy, etc.
- **BSL-2 microbiology and culturing labs** to ensure trial hygiene and conformity.
- **A cooking area**, to test applications in real-world professional conditions.

This platform, unprecedented in France, lets start-ups **accelerate the move from fermentation to commercialization**, while reducing the costs and delays associated with outsourcing.

Protopia has received **€2 million in funding**, including €1.3 million from the Île-de-France Region, €217,000 from FNADT (regional prefecture), €100,000 from Revitalization Nokia funds and €383,000 from in-house funding. That support testifies to a

clear ambition: strengthen the competitiveness of French biotechs by offering them a **continuum of accompaniment** from proof of concept to marketing.

With the Protopia-GATE^x combo, Genopole now proposes an agile offer for industrialization. The integrated and segment-targeted approach will give impetus to **the emergence of a sovereign biomanufacturing sector capable of fusing scientific excellence, industrial agility and impactful sustainability**.

Protopia proposes five 10-m² floorspaces for formulation work, all **equipped to test, adjust and prefigure finalized products**.

5

10-m² formulation floorspaces.

€2

million funding received for Protopia.



Testimonial

Nutropy: fermented caseins for sustainable nutrition

Imagine a near future where cheeses are produced with the same nutritive and gustatory qualities they have today but without the need for livestock farming? That's the mindset of Nutropy, a start-up breaking new ground in the development of dairy proteins from precision fermentation.



With its technology, Nutropy produces caseins identical to those in dairy but without the need for animals. Their disruptive technology responds to the food & agriculture sector's search for solutions in sustainability.

"Our objective is to provide ingredients that address environmental and food sovereignty issues while also meeting consumer expectations," explains Nutropy Cofounder and CEO Nathalie Rolland. By removing livestock farming from the production chain, the start-up is reducing the carbon footprint of and the resources mobilized for cheese production.

The objective is to provide ingredients that address environmental and food sovereignty issues while also meeting consumer expectations.



The company's daring vision was honored in 2023 by the Grand Prize of the i-Lab competition organized by Bpifrance to distinguish high-potential technological innovations. That strategic recognition was echoed in 2024 by the company's integration in the French Women Entrepreneurs 40 (FWE40) program, which honors high-growth start-ups headed by women. "These distinctions reinforce our credibility in the eyes of investors and industrials, and open precious opportunities for partnerships," underlines Nathalie Rolland.

Incubated by Genopole since 2020, first in the Shaker then in Gene.iO, Nutropy has successfully structured its development steps. Today, the company employs about 15 people in its laboratories located at the Genopole Enterprises incubator (Essonnes CCI).

Nutropy's next step is industrialization. To make the change from laboratory to large-scale production, the company is calling upon the recently inaugurated GATEX platform. *"These structures let us test our processes in preindustrial-size fermentors without needing to mobilize funds that would be onerous at this stage. They are essential levers for our scale-up."* In parallel, the company's team is navigating the waters of international regulations with the objective of launching its first products in 2026 in Europe and North America.

In a fermented caseins market currently lacking many competitors, Nutropy is advancing with methodology and ambition. The innovation is there and the technology ready. There remains the need to pass the upscaling step, a *sine qua non* for bringing their innovative alternative to tomorrow's dinner plates.



Genopole and research laboratories

SynBioTherapy: synthetic biology as a motor for biotherapies

On 27 November 2024, researchers, clinicians and bioengineering experts gathered in Paris for the SynBioTherapy symposium, co-organized by the DIM BioConvS and the PEPR Biotherapies and Bioproduction, with support from Genopole.

The conference marked a key advancement in creating ties between synthetic biology—still emerging in France—and the world of biotherapies.

"We were in need of moments of convergence like this one to decompartmentalize approaches and create new synergies," explains Chiara Fracassi, coordinator of DIM BioConvS.

A day for bridge-building between disciplines and accelerating therapeutic innovation.

As the day advanced for the various participants, concrete demonstrations illustrated how the engineering of biological systems opens paths toward better-targeted, reproducible and personalizable therapies. Exchanges were focused not only on **ex vivo**, **in vivo** and **cell therapy applications** but also on technological obstacles that remain to be overcome, for example methods standardization.

Among the renowned speakers at the event were Velia Siciliano and Filippo Menolascina, who shared their

knowledge on cell engineering and automation in the laboratory. Specific sessions were dedicated to biotherapeutic applications and challenges, with presentations from researchers, such as I-Stem's Christelle Monville, who detailed both the advances and the roadblocks in the production of retina cells from iPS cells.

The Biofonderie: automating innovation

True "R&D factories," biofoundries were at the heart of discussions. As explained by Stéphane Lemaire (Sorbonne University), via automation, biofoundries enable the rapid conception, construction and testing of biological systems at large scales. They are clear strategic assets for speeding the development of novel therapies and the industrialization of research.

"Biofoundries favor a systematic and interdisciplinary approach, which is essential for advancing the future of medicine," stated Genopole's Christophe Lanneau.

Finally, the conference gave the **Horizon Europe national contact point coordinator** (Inserm) an opportunity to present the European call as concerns synthetic biology in health. Horizon Europe is a structuration lever for strengthening the French scientific community and opening paths to new European projects.

Genopole platforms and infrastructures

The SATURNE program: financing state of the art equipment

In an era of rapidly advancing technological innovation, having access to cutting-edge equipment is a strategic necessity for labs and businesses in life sciences. To address that need, Genopole deploys its yearly equipment acquisition program, SATURNE (support via the acquisition of technologies useful for novel research and companies).

Widely adopted by the biocluster's labs and businesses, SATURNE supports investments in high-impact scientific materials deployable on Genopole's shared-use model. Functioning as a complement to the requester's funding effort, the program is intended for Genopole entities (academic labs, innovative businesses, technological platforms) looking to modernize or grow their equipment inventory with the aim of increasing their performance, visibility or ability to take on new projects.

The yearly structuring call for proposals stands out for its implementation flexibility, its reactivity and its grounding within the Genopole ecosystem. Each dossier is

studied on a basis of scientific, technological and strategic criteria: the innovative nature of the equipment, its openness for the ecosystem, its ability to advance projects underway or to come.

The program has two main aims:

- allow current teams to benefit from a state of the art technological environment;
- attract new talent or partners by way of the quality of proposed infrastructures.

SATURNE supports investments in high-impact scientific materials deployable on a shared-use model. In so doing, it acts as a major attractor for Genopole.

A closer look...

The SATURNE 2024 call: Genopole equips excellence

Issued in February 2024, the SATURNE call for projects ultimately retained ten projects for state of the art technologies submitted by academic labs, Genopole businesses or shared service structures like the Genopole Enterprises incubator (Essonne CCI).

€1.2 million of the requested €2.13 million were able to be invested. The headliner equipment was a **Merscope Ultra spatial transcriptomics system (Vizgen)** for the Integrare laboratory. That system can map the expression of thousands of genes directly from a tissue sample. Genoscope strengthened its sequencing capabilities with a trio of equipment for sample preparation: a cryogenic grinder, a multi-sample sonicator and a pipetting robot, all state of the art.

I-STEM benefited strategically from the program by modernizing its functional imaging systems with a **FDSS/μCELL kinetic plate imager (Hamamatsu)**, vital for real-time imaging of the activity of stem-cell-derived tissues. This technological novelty illustrated the enabling role of the OCCIGEN platform in cellular modeling projects.

Finally, The Genomics Metabolics unit's Atige team acquired an **automated microscope** and the LBEPS lab a **Jess automated western blot system (Bio-Techne)**, which will enable the analysis of proteins in very small tissue samples, a crucial issue in biomedicine.



Genopole and research laboratories

3 questions for...

Vincent Bouhier

President of the University of Évry-Paris Saclay

**What is the relationship between the University of Évry-Paris Saclay and Genopole?**

Vincent Bouhier: The university is a founding member of Genopole: a federating actor and a catalyst for shared actions in research and training. We've created institutional and indefectible ties, notably with respective seats on our administrative boards. Concerning research, we are founding members of GenoTher, the gene therapy biocluster in Évry-Courcouronnes. For years now, the University of Évry-Paris Saclay has teamed with Genopole to develop highly needed training programs in genomics research. Similarly, in the Essonne department and particularly in Évry, we accompany public policy for spin-off creation from both research laboratories and young companies.

**And what about laboratories and technological platforms?**

V. B.: Genopole and the university have mutually nourished one another over the past twenty years, so much so that today the activities of nine of our labs are directly tied to genomics (gene therapies, genome data management, etc.) and the biofoundry as well. Our close relationship has engendered an entire ecosystem involving not only the South Île-de-France Medical Center (CHSF) but also Inserm and Genethon. As concerns innovation, notably, we've invited Christophe Lanneau, director of research & platforms at Genopole, to join our delegation for the visit to our

partners at MIT (Boston, USA), so that we can study opportunities for partnerships and strengthen our actions in favor of innovation and incubation. We're also involved in the Atige and ApogeeBio programs as well as in iGEM and the D4Gen Hackathon.

Our research teams are also active in the research platforms, particularly the DNA and Cell Bank at Genethon, our lab Lambe (Analysis, Modeling and Materials for Biology and the Environment) for imaging and mass spectrometry studies, or IBISC for its bioinformatics tools.

"Genopole and the University of Évry-Paris Saclay have mutually nourished one another over the past twenty years."

What joint events do you organize?

V. B.: The Science Festival is particularly close to our hearts because it attracts young women towards experimental and exact science programs. We co-organize conferences, such as conferences on Health and AI, as part of the Évry Sénart Sciences and Innovation organization, which brings together higher education and research stakeholders from the Greater Paris South region, and the Innovative and combinatorial Therapies Congress with Genopole. It is important to make the connection so that research and patents go out of the laboratories.

Genopole and research laboratories

Energize research

To translate ideas into innovations, Genopole accompanies public and private research through its shared-use infrastructures and its dedicated funding programs. The biocluster's programs attract high-level, international scientific talent, finance high-potential projects and accelerate their transfer to industry.

Atige: funding to accelerate innovation

The objective of the Genopole Thematic Actions Incentive, or Atige for short, is to help researchers create teams within a research unit already present at the biocluster. The program contributes to the emergence of tomorrow's leaders in science by giving tenured researchers the means to create their teams. The Atiges have a maximum duration of three years and are intended for researchers who already have a position within a public organism or are likely to attain one rapidly. **Candidate projects must be coherent with Genopole's centers of interest:** genomics and post-genomics, biotherapies, bioinformatics, biophysics, engineering sciences as applied to large-scale biological domains (transcriptomics, proteomics, metabolomics, systems biology, synthetic biology, etc.).

As a program for excellence, Atige grants play a key role in the development of new research teams and the emergence of disruptive research topics. The program **enriches the biocluster with new scientific orientations in a lasting manner**, since close to half of the beneficiaries have remained at the site or become team heads or unit directors. Indeed, since the program's launch in 2001, nine laureates have remained at their hosting laboratory and two have created new research units at Genopole. Moreover, there are six Atiges currently underway.

To create their new teams, Atige laureates receive three years of funding and hiring possibilities for technicians (fixed-term contracts), PhD students or postdocs. The four Atiges allocated over the last few years are strengthening health research at the biocluster, notably in innovative biotherapies, a sector supported by Genopole and of strategic interest for the Île-de-France Region.



Two laureates for the third ApogeeBio call for candidates

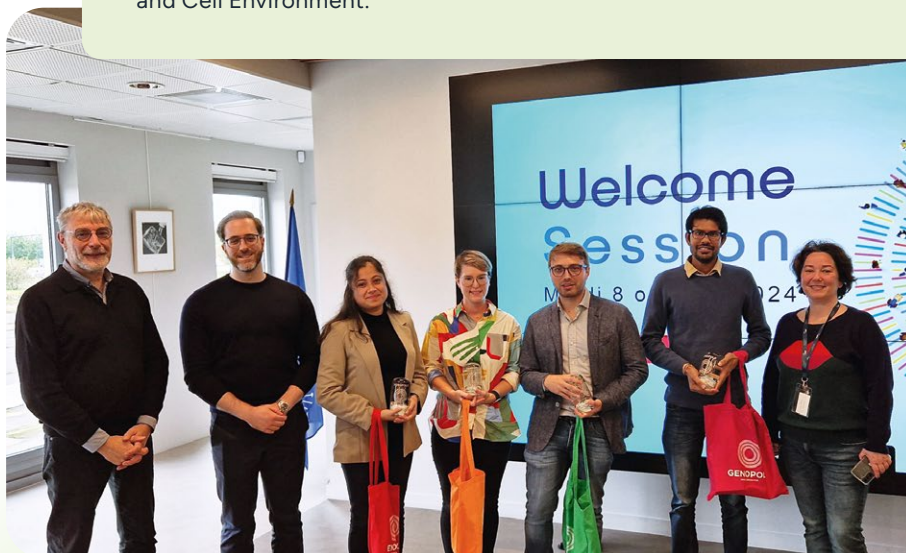
ApogeeBio is a program of accompaniment and European funding for postdoctoral projects. It is intended for young foreign or expatriate-French researchers. ApogeeBio finances two years of postdoctoral research at Genopole in life, social or computer sciences pertinent to the healthcare or environmental sectors.

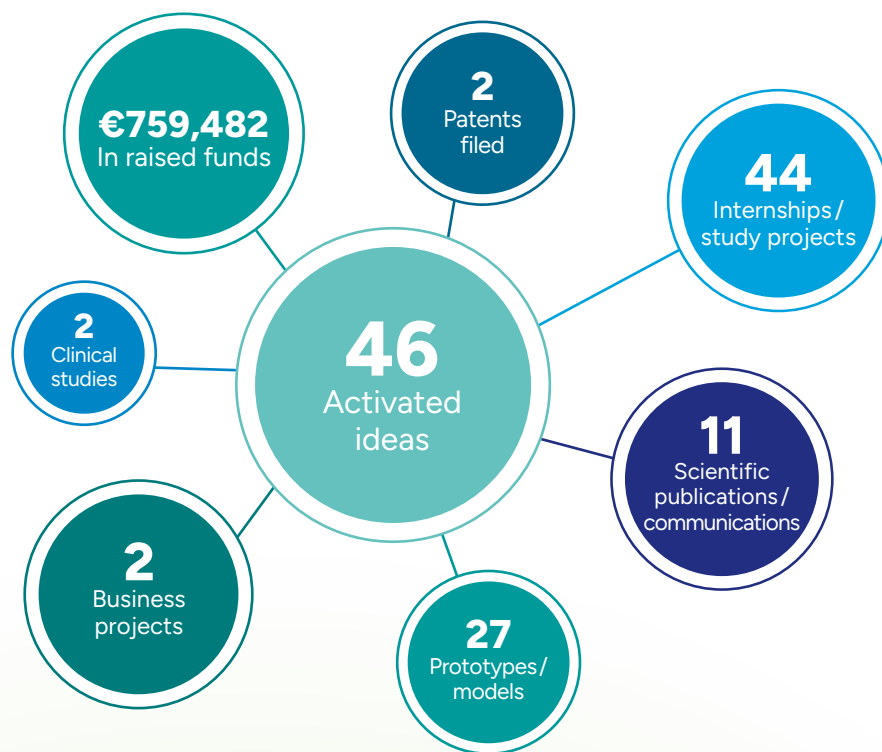
For the third edition of the call for candidates, which was finalized on 28 February 2024, allocations were attributed to two young postdocs, who will be hosted by the Genopole companies STH Biotech and Cell Environment.

35

researchers

have created teams and launched novel research topics thanks to Genopole's Atige program since 2001.





Call for Innovative Ideas: building bridges between innovation in the hospital and research at Genopole

The biocluster and the Grand Paris Sud Urban Area (GPS) provide accompaniment to transform the innovative, care-improving ideas forwarded by nearby hospital personnel into full-on technological or scientific projects.

On 2 December 2024, **five innovative projects to improve hospital care, including two in artificial intelligence (AI)**, were selected from the seventh edition of the Call for Innovative Ideas. Representing the South Île-de-France Medical Center, the Arpajon Hospital Center and the Coubert Rehabilitation Center, the call's laureates will **receive funding support and accompaniment from Genopole** to get their projects rolling. The principal topics of last year's call included the conception of digital tools (AI, immersive technologies, etc.) care provision improvements, therapeutic decision making and training.

46 newly-born ideas

The objective of the Call for Innovative Ideas is to favor innovation in the hospital setting and the emergence of Genopole-supported collaborative projects between the hospitals and the biocluster's research labs (informatics, genomics). These projects also involve such higher education institutes as ENSIIE (French Grande École for informatics in industry and business), Télécom SudParis, Icam and the University of Évry-Paris Saclay for internships and study projects. The initiative aims to **harness synergies by enabling interdisciplinarity**. It favors the development of innovative solutions to medical challenges and contributes to the dynamic of biomedical research at the biocluster.

The call has led to two genetic research projects (characterization of pathological or environmental mechanisms, research for biomarkers) and ten or so collaborative research projects between the CHSF and the IBISC, LBEPS and CNRGH labs. In parallel, internships or study

More than 60 hospital and paramedical personnel representing more than 20 medical specialties have already responded to the Call for Innovative Ideas, which, moreover, gives researchers an opportunity to participate in projects at the interface of clinical research and patient care.

projects have been done by around 50 students, mostly from the territory's engineering schools such as ICAM (Paris Sénart site) Télécom SudParis and ENSIIE.

A winning trio: funding, accompaniment and networking

In concrete terms, the territory's hospital personnel submit original ideas for products, processes or services aimed at resolving real-practice problems, and Genopole accompanies them to transform their ideas into research projects then real-practice solutions. Laureates of the Call for Innovative Ideas can benefit from up to €10,000 in seed funding cofinanced by Genopole and Grand Paris Sud. Another advantage is the personalized accompaniment provided by GIP Genopole (assistance for finding scientific, technological and industrial partners at the biocluster, support for roadmapping, identification of service providers, etc.). Finally, the hospital practitioner or paramedics have a chance to establish a partnership with a lab, a business or an engineering school.

Genopole and research laboratories

3 questions for...

Anne Galy

Director of the Genomic Therapy Technology
Research Accelerator (ART-TG), Inserm



ART-TG has been at Genopole since 2020. What is its mission?

Anne Galy: ART-TG is an Inserm laboratory dedicated to gene therapies. Its missions are to carry out research for innovative immunotherapies (cancer, infectious diseases, fibrosis) or gene therapy treatments (immunodeficiency, sickle-cell anemia) and to accompany technology transfer with the objective of advancing gene therapy products to the clinical trial stage. Achieving those missions involves combining basic research, pharmaceutical expertise and industrial processes proficiencies, particularly for the production of viral vectors, such as lentiviral vectors used in cell and gene therapies. We're an Inserm technology research accelerator, an entity aimed at structuring state of the art technological competencies to support field-leading biomedical research and the development of novel therapies. Our activities include partnerships with academic and private actors, notably for the production and quality control of vectors or modified cells.

"ART-TG is an Inserm laboratory dedicated to gene therapies."

What large steps has ART-TG taken recently in its development?

A. G.: ART-TG is accredited within the France 2030 program as an integrator for biotherapies and biomanufacturing. That label recognizes our role in national efforts to strengthen France's sovereignty for the production of innovative therapeutics. At the end of 2024, we also received ISO 9001 certification for our lentiviral vector activities. This further increases our credibility, particularly for clinical trials. And finally, starting in September 2025 and in partnership with two other Inserm units and the Institut Imagine, we will host the GenoTher biocluster's coming Genomics and Genome Editing Quality Control platform for safety analyses of genome-edition-derived products.

What is ART-TG's relationship with Genopole today?

A. G.: Genopole offers a structuring framework for our activity. The biocluster hosts us within the Cytopolis building and provides us with a fertile environment for the development of cutting-edge projects. We have also benefited from Genopole's support programs with the Atige grant to bring a researcher on-board, and more largely the biocluster's stimulating ecosystem, with its other labs and businesses and integration within the Paris-Saclay University's excellence campus.





Genopole and research laboratories

Hackathon D4Gen 2024: 48 hours of innovation for life

On 22–24 March, Genopole united close to 100 participants at Onepoint Paris for the third edition of D4Gen Hackathon, organized with the help of Amazon Web Services (AWS). During the non-stop, 48-hour event, researchers, students and start-uppers merged their know-how to take on technological challenges in health and the environment.

The event counted 12 participating teams, all focused on the shared objective of imagining concrete and sustainable solutions for issues in life sciences. Collective intelligence and scientific emulation were the motors of this marathon of ideas—and the marathon of ideas a springboard for innovation.

Ambitious projects and an expert jury

The jury, composed of eight experts from academics and entrepreneurship, appreciated the quality and audacity of the proposed projects.

Six teams took home prizes:

- **First Prize:** MnemoGemonics (University of Lausanne) for its human genome analysis application built upon large language model technology. *"Our project involves applying the same technology underlying ChatGPT to DNA and genomics. We are very happy to have been chosen as a laureate and we greatly appreciated the team approach over the 48 hours of non-stop work in this good-natured atmosphere,"* explains Gaël Millot.

- **Second Prize:** BioMiMic (AgroParisTech) for its AI aimed at sustainable bioactive compound discovery.

- **Third Prize:** ARN3D (bYoRNA) for its optimization of protein-RNA binding.

Three Jury's Favorite prizes were also awarded to the projects XylSevo, HydrographiX and I-Research, all forwarding promising and engaged innovations.

A catalyzing event

Beyond being a fun and productive competition, D4Gen Hackathon is also a training experience for the participants, who get to work on real-world issues, confront the imperatives of innovation, benefit from mentoring and build bridges between academics and entrepreneurship.

2024 jury: Nazim Agoulmine, Kenza Belhaj, Nesma Houmami, Christophe Lanneau, Christelle Monville, Vanessa Proux, Daniel Stockholm, Gilles Trystram.

Close to

100

participants
for the third edition
of D4Gen Hackathon.

6

teams awarded.

Genopole and research laboratories

3 questions for...

Ioana Popescu

Associate Professor at the University of Évry-Paris Saclay

Yearly since 2017, Ioana Popescu has accompanied student teams for the international synthetic biology competition iGEM.



“Produce compounds of interest more efficaciously.”

What motivates you to participate in competitions and how has doing so influenced your pathway?

Ioana Popescu: For me, these competitions represent a unique opportunity to test new ideas in a stimulating setting and surrounded by people sharing a same passion. They get me out of my comfort zone, allowing me to experiment innovative solutions and work with teams on concrete projects that, although academic at the time, have the potential for real impacts. The iGEM competition offers me an opportunity not only to develop technical competencies but also to explore larger aspects, such as scientific communication or biotechnology ethics.

The D4Gen Hackathon organized by Genopole let us start the computational work and use artificial intelligence within the setting of the PHAGEVO project. At D4Gen, we met highly motivated students whose passion for the sciences led them to join the Genopole–University of Évry-Paris Saclay 2024 iGEM team. These experiences strengthened my conviction that innovation and collaboration are essential for advancing synthetic biology.

What major breakthroughs are you seeing emerging in biotechnologies and how does your research fit in?

I. P.: I think the major advances to come in biotechnology will be in the settings of sustainable biomanufacturing, precision genome editing and the use of AI technologies to optimize R&D processes. Personally, I am particularly interested in green biomanufacturing and the deployment of more sustainable solutions for reducing the environmental impact of the chemical and pharmaceutical industries.

My current work is focused on the development of novel microorganism strains able to produce biological compounds of interest efficaciously and with a lower carbon footprint.

What advice do you have for young researchers aiming to participate in biomanufacturing and scientific competitions?

I. P.: I'd tell them to not hesitate to jump in, even if at first they don't feel they have all the competencies and knowledge necessary. Competitions like iGEM or hackathons are great environments for learning, for exchanging ideas and for developing partnerships with experts in the field. It is important to remain curious and to not fear asking questions or requesting mentoring. Also, I would encourage them to create solid networks by participating in events and interacting with professionals in the sector. These encounters are often sources of inspiration and catalysts for partnerships and career opportunities.



Genopole and research laboratories

D4MedTech: a *Tiers-Lieux* d'Expérimentation to reinvent the care itinerary in diabetology

In December 2024, Genopole was chosen as a laureate of the *Tiers-Lieux d'Expérimentation* call for proposals in eHealth, a part of the national France 2030 strategy. This call provides funding to entities in France able to respond to a current lack of eHealth experimental facilities in the country. With D4MedTech, the Essonne biocluster is thus launching a structuring initiative for the use of digital technologies to bring innovation in diabetology and a transformation of medical practices for the benefit of patients.

This *Tiers-Lieu* functions within the dynamic of "5P" medicine—preventive, predictive, participative, personalized and pertinent—and responds to the increasing need for technological tools to prevent diabetes or monitor and accompany the patients who are living with it. Within a collaborative framework uniting researchers, clinicians, businesses and patients, D4MedTech's purpose is to accelerate the development of concrete and clinically validated solutions to meet the needs of diabetes patients in the Essonne territory.

Two pilot projects with ambitious objectives

D4MedTech is currently forwarding two, potentially high-impact experimental projects:

- **PREDIDIAB** is aimed at the early prediction of type-2 diabetes risk in young adults via an algorithm integrating salivary test results and a personalized questionnaire. The project's objective is to detect risks before diabetes manifests and establish targeted prevention strategies. The PREDIDIAB team plans to ultimately pursue CE marking for its technology to allow its large-scale deployment.

- **MFDeep** seeks to address fetal macrosomia, a pregnancy complication made more frequent by gestational diabetes. By combin-

ing ultrasound data, continuously monitored physiological data and insulin assay, this project hopes to furnish a reliable decision aid for obstetricians. Its objective is to reduce unnecessary preterm birth for the good of mother and baby.

An ecosystem mobilized for health innovation

D4MedTech's success is built upon strong teamwork between public and private actors. The project calls notably on the **South Île-de-France Medical Center (CHSF)**, the **Center for Studies and Research for the Intensification of Diabetes Treatment, (CERITD)**, **EIT Health France** and the **SATT Paris-Saclay** to bring about solutions tested in real-life conditions to genuinely respond to the needs of caregivers and patients.

By favoring codevelopment and experimentation, D4MedTech intends to accelerate the transfer of lab innovation to healthcare provision, strengthen eHealth business competitiveness and consolidate France's place in digital technologies for health.



The vocation of D4MedTech is to accelerate the development of concrete and clinically validated solutions.

Genopole's reach

Genopole strengthens its visibility for strategic audiences—researchers, entrepreneurs, international partners—through targeted communications, increased presence at major events and concrete initiatives to bring renown to its life sciences innovation ecosystem, not only in France but in Europe and across the globe.



Genopole's reach

Communication & attractiveness

Genopole grows its attractiveness by valorizing the innovations of its labs and start-ups in a multichannel communication strategy, comprising events, publications and targeted actions to draw the eyes of talents, investors and partners.



Convention signed with Paris-Saclay

On 12 January, a decisive step was taken for the Île-de-France biotechnologies ecosystem: Genopole President Stéphane Beaudet, Genopole Chief Executive Gilles Trystram and Paris-Saclay University Vice-President of Research & Valorization Thierry Doré officialized a strategic partnership with high scientific value. The partnership aims to energize innovation in biotechnologies for health and the environment, two key sectors for addressing tomorrow's societal challenges.

By mutualizing competencies, state of the art technological platforms and dynamics for training & research, the two institutions intend to create a powerful motor for accelerating the transfer of knowledge to innovation, supporting the emergence of new collaborative models and building a solid base of shared infrastructures always ahead of the needs of the sector. The partnership signals a clear vision: make Genopole and Paris-Saclay an indispensable center of excellence for bioengineering.



Genopole: a partner for the Techinnov trade fair, a spotlight on Île-de-France innovation

With Grand Paris Sud, Genopole participated in Techinnov, a major event organized by the Essonne and Paris-Île-de-France chambers of commerce and industry. Genopole benefited from the annual trade fair to promote its accompaniment and real estate offers, not to mention its state of the art equipment highly pertinent to the objectives of France 2030. Three of Genopole's accompanied businesses, Fungu'it, Alga Biologics and Synovance, won awards in Techinnov's competition, in the fields of decarbonization, biodrugs and food alternatives. Each received a €2,000 prize presented by Essonne CCI President Patrick Rakotoson and will benefit from strengthened accompaniment.

Genopole: active participation at the Paris-Saclay SPRING event

Genopole put its biotech ecosystem in the spotlight at Paris-Saclay SPRING. In 2024, Christophe Tarabout, CEO of the Genopole start-up Vitropep, was a laureate in the Health-Biotech category of the event's SPRING 50 promotion.

Also, Genopole opened its doors for exclusive visits to its R&D centers as part of the "Innovation Tours," which gave the event's participants a chance to discover its infrastructures. The guests visited the Genopole Enterprises incubator (Essonne CCI) and SK-pharmteco's new biomanufacturing facilities.



DNA Day celebrated 25 April

The globe-spanning DNA Day commemorates two major events in the history of molecular biology: the discovery of DNA's double-helix structure in 1953 by Rosalind Franklin, James Watson and Francis Crick; and the completion of the Human Genome Project in 2003, the largest collaborative genomics research project ever done.

The event is dedicated to the promotion of advances in genetics & genomics and to issues in science and medicine.

In 2024, DNA Day was held at Genopole, a site emblematic of France's participation in the **Human Genome Project** via the major contributions made to it by Genethon (AFM-Téléthron's laboratory) and Genoscope, the national sequencing center.

Genopole had the privilege of welcoming Jean Weissenbach (Genoscope (CEA), French Academy of Sciences), a renowned researcher, a pioneer in the exploration and analysis of genomes and a leader in the sequencing of chromosome 14.

Genopole acts to structure a biomanufacturing sector for health in France

In 2024, Genopole increased its involvement in the development of biomanufacturing for biodrugs by way of two major events:

- On 3–4 April, Genopole participated in the **France Bio-production Congress**, the reference meet-up for all of the sector's public and private actors co-organized by Polepharma and Medicen Paris Région. The event brought together more than 500 professionals at the Paris-Saclay Palais des Congrès conference center in Massy. It was focused on such strategic themes as sustainable innovation, industrial acceleration and the One Health approach.

- On 5 July, Genopole hosted the **National Day for the Bio-production of Biopharmaceuticals (JNBB)**, organized by France BioLead. The first edition of the event was open to all with the goal of spreading knowledge on issues within this essential sector for the future of innovative therapies. The day's schedule was rich in visits to businesses and labs (Genethon, Yposkesi Gingko Bioworks), presentations of projects, pitches by start-ups and talks by major sector actors.



GPW to accelerate biotech innovation

The Genopole Partnering Week (GPW) brought close to 100 start-ups, 65 investors and 30 industrials to Paris with the objective of speeding biotech innovation in health and the environment. The event counted more than 130 B2B meetings.

Genopole Chief Executive Gilles Trystram opened the event, and Laurence Lacroix-Orio presented Upscale Bio, a new accompaniment program for the industrialization of start-ups.

A pitching competition gave a chance to shine to start-ups accompanied by Genopole or its partners such as Servier & BioLabs's Spartners incubator and Paris-Saclay's public research incubator IncubAlliance. Two prizes were awarded, one to Global Bioenergies (Environmental Impact) and one to Ispiron (Health). Both companies will receive personalized support from Genopole. The jury of partners and experts praised the quality of the presented projects.

Genopole's reach

European & international development

With its participation in large-scale collaborative projects and accompaniment for the internationalization of its start-ups, Genopole is part of a European dynamic and constantly strengthening its key role in biotech innovation, on the old continent and beyond.



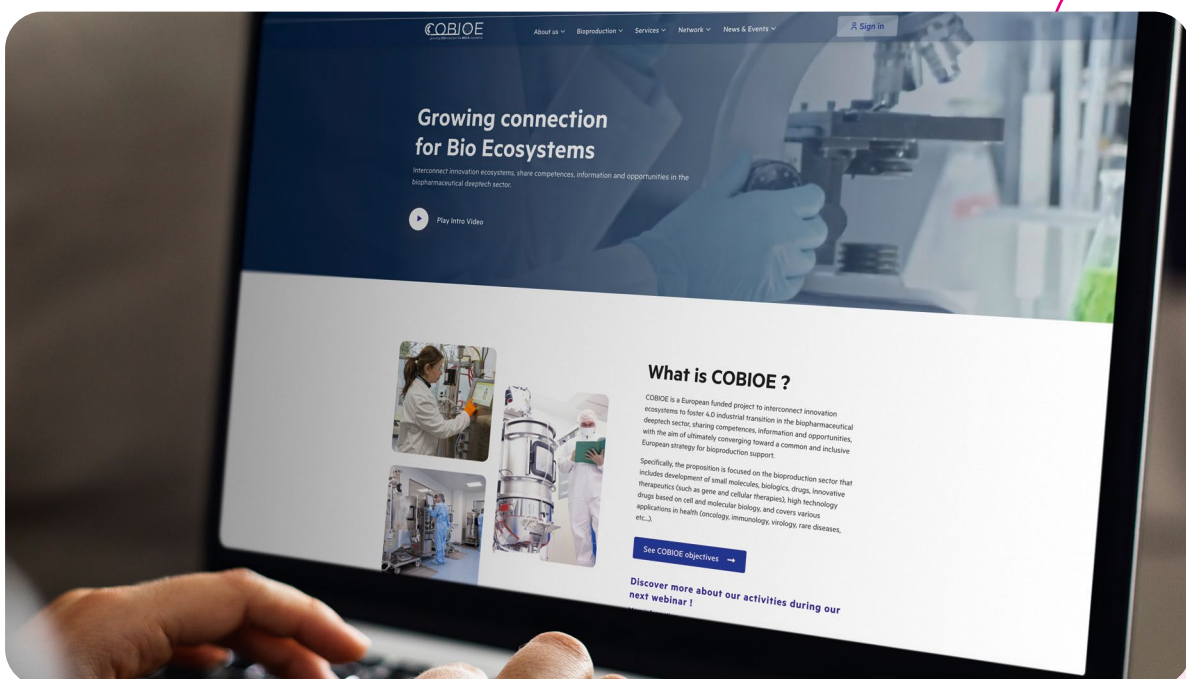
The COBIOE project: a new interconnection platform for European biomanufacturing

In March 2023, the "Growing Connection for Bio Ecosystems" (COBIOE) project was initiated with the objective of bringing about a common and inclusive European strategy to strengthen and interconnect the continent's health biomanufacturing sector. In January 2024, to help make that objective real, Genopole and its consortium partners officially launched a collaborative platform that, today, catalogs and maps more than 1,000 entities in the health biomanufacturing sector and counts around 100 active users. In November 2024 a community hub was established (on Jamespot) and the first work groups set in motion, focusing particularly on industrial sovereignty and technological transfer.

Indeed, COBIOE intends to contribute to overcoming the numerous challenges in biomanufacturing by facilitating collaboration among all of the sector's actors and, in so doing, help ensure European sovereignty for access to innovative therapies.

1,000

entities in the health biomanufacturing sector have been catalogued and mapped.



APROVALS project

Coordinated by Genopole and with a total budget of €1 million, the APROVALS program is on-track since September 2024 for a two and a half year voyage..



Its objective is to develop a “regulatory sandbox” methodology to accompany the legal and technological development of companies working in cellular agriculture. Year-end 2024 was rich in advances: the field’s actors were catalogued and mapped in-depth, existing regulatory sandboxes across the globe were benchmarked and initial discussions were held on the structuration of the technological value chain. In addition to Genopole, APROVALS is energized by pioneering agri-food clusters and innovation hubs from across Europe. They include EuropaBio (Belgium), VTT Technical Research Centre (Finland), Vitagora (France), Irish Bioeconomy Foundation (Ireland), Campania Bioscience (Italy), Planet B.io (Netherlands) and Smile Incubator (Sweden).

The objective is to develop a “regulatory sandbox” methodology to accompany the legal and technological development of companies working in cellular agriculture.

→ International missions

Genopole takes start-ups to the World Health Expo Dubai

A Genopole team was in Dubai for the 50th edition of World Health Expo Dubai (formerly Arab Health), held from 29 January to 1 February 2024. The team participated both in the MENA (Middle East and North Africa) region’s principal health conference and in the organization of a one-week bootcamp with in5 Dubai. After Cell Environnement and endogene.bio in 2023, Genopole put a spotlight on the biotech Okomera and the cleantech iUMTEK at the 2024 edition of this health technologies trade fair.



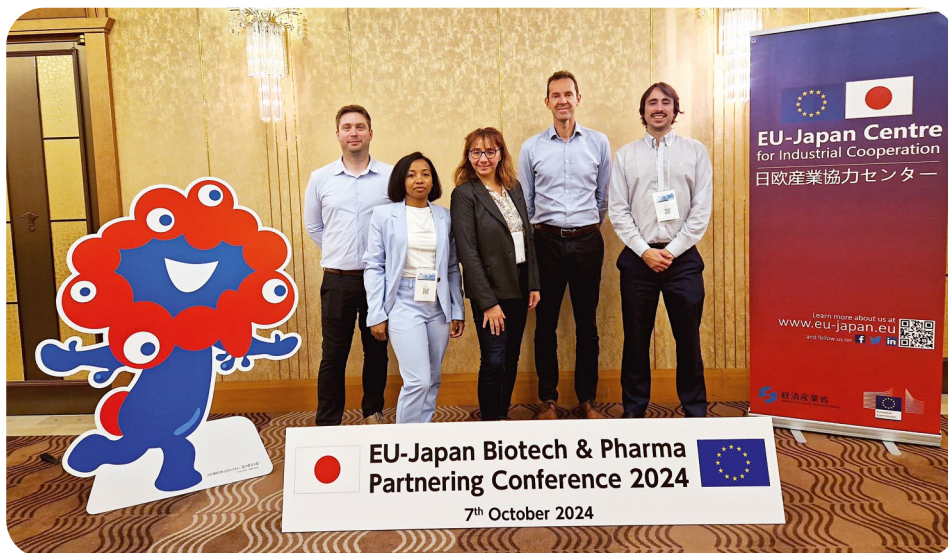
A French delegation at BIO USA

Within its mission to the BIO USA convention, held 3–6 June in San Diego (California), the Genopole team pursued three main objectives: promote Genopole accompaniment to attract new talent, highlight biocluster companies and gather information on market

and regulatory tendencies. All of the world’s industrial, financial and institutional actors were to be found at BIO USA. The start-ups STH Biotech and endogene.bio travelled with the Genopole team for this annual international event.

3

major objectives
for Genopole at the BIO USA convention.



The biocluster's missions to Japan and Singapore

Genopole was in Japan from 4 to 11 October with the primary goal of attending the Bio-Japan partnering event. No less than Asia's most important event for biotechnologies, BioJapan 2024 drew 17,000 visitors and nearly 1,000 exhibitors from 34 countries. Genopole seized the opportunity to grow its international network of investors and corpo-

rations and present to them such biocluster companies as Abolis and Ispiron. A month later, Genopole was back in Asia for Agri-Food Tech Expo Asia (AFTEA), held 19–21 November in Singapore. There, the mission team participated in the Asia-Europe forum on nutrition technologies, accompanied its businesses and coordinated B2B meetings.

17,000

visitors
at BioJapan.

1,000

exhibitors
at BioJapan.

Welcoming international delegations

The international renown of Genopole earns it the honor of regularly welcoming delegations from across the globe. 2024 was no exception, with visits from:

- the **Kobe Biomedical Innovation Cluster (Japan)** for an institutional meeting;

- the **Development Center for Biotechnology (Taiwan)**, whose representatives were accompanied by colleagues from the Taiwan Ministry of Economic Affairs to explore biotech partnering opportunities;
- the **research division of the Chilean economic development agency (CORFO)**, in the company of the Center for Systems Biotechnology (CSB-UNAB).



Paris hosts the CEBR annual conference in May 2024

Co-organized by Genopole and Medicen Paris Region and held 14–15 May 2024, the General Annual Meeting of the Council of European BioRegions (CEBR) drew more than 50 participants representing diverse clusters and innovation ecosystems from across Europe. CEBR is a pan-European network connecting health clusters and ecosystems. Genopole is an active member of it and holds a seat on its board. CEBR bolsters knowledge transfer and partnerships between its member entities with the aims of supporting sustainable growth for health SMEs and making Europe a competitive leader in the global economy.

CEBR bolsters knowledge transfer and partnerships between its members to support sustainable growth for health SMEs.

50

participants
from across Europe.

Real estate ambitions and projects

Because it accompanies the lab & office space needs of its start-ups, Genopole exercises a proactive real estate strategy comprising available tracts and premises, all integrated within a global structuration designed to serve innovation. Start-ups are able to grow at the site and benefit from technological platforms.



SEM Genopole's missions

Support biotech growth via an ambitious real estate strategy

SEM Genopole (SEM: French acronym for mixed-economy company) accompanies the biocluster's dynamic by deploying a real estate offer adapted to the needs of innovative labs and businesses. With more than 41,000 m² of office & lab space and 7 hectares of strategic tracts, the SEM anticipates future needs via structural projects such as GenoLife and Cube. The SEM's ambition is to create a complete offer covering start-ups, SMEs, small caps and industrials.

GenoLife: a new dimension for innovation

Forwarded by SEM Genopole in association with local collectivities, **GenoLife** signals a new step in the biocluster's development. The 21,000 m² real estate project has a clear ambition: accommodate life sciences businesses in an environment that is **highly modular, innovative and ready for use**.

Conceived with the Patriarche and Bart[-Patriarche agencies, the GenoLife project is based on the **LabReady** concept, an intelligent layout approach allowing businesses to personalize their premises as a function of their maturity and needs: research, testing, biomanufacturing, etc. This structural flexibility **saves valuable time** for companies when setting up or adapting their activities, while also offering a high level of technical comfort.

More than just an infrastructure, GenoLife was designed to **favor synergies** between health and bioeconomy actors. Shared areas and places to meet, eased access to Genopole's technological platforms and other services: everything was conceptualized to encourage exchanges, stimulate creativity and attract the best in national and international talent.

Conjugating architectural ambition, use flexibility and territorial anchorage, GenoLife strengthens Genopole's accommodation capacity and consolidates its attractiveness for French and European actors in biotech innovation.

The mutual involvement of the SEM and the GIP illustrates the force of their synergies: concrete accomplishments and shared missions conceived to respond in a targeted and agile manner to the needs of Genopole's citizens.

David Bodet,
Chief Executive of SEM Genopole,
Deputy Director of GIP Genopole

→ Cube: Bringing biomanufacturing projects to life

In parallel, the **Cube** project rounds out this strategy with an offer tailored to the needs of **bioindustry** companies. Located at the heart of the Genopole ecosystem thanks to tracts made available by the Grand Paris Sud Urban Area, the 10,000 m² building proposes **modifiable rental spaces** able to accompany the scale-up of research-born industrial projects.

Designed to meet **good manufacturing practices (GMP) standards**, Cube's open floor plans, high ceilings and non-load-bearing walls enable the rapid deployment of **cleanrooms** or technical workshops and ease any future redesigns. Cube is an ideal solution for biotech SMEs seeking to move rapidly from the lab to production with no need to change their location.

It thus represents an **essential link** in Genopole's lab & office space chain, providing businesses with the conditions they need for their **industrial growth** and **stay in the territory**.



Genopole thanks its members



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(Ministry of Higher
Learning and Research)**

Philippe Baptiste,
minister



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Regional Council**
Valérie Pécresse,
president



**Essonne Departmental
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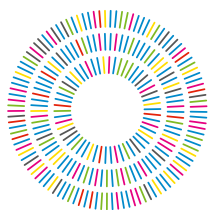
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