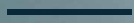# Leaps by Bayer
Press Kit

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leaps

Leaps by Bayer is the impact investment arm of Bayer AG. We invest in teams pursuing funda-mental breakthroughs in life science, targeting 10 huge challenges facing humanity.

Some call them impossible. We call them "Leaps".

Leaps at a Glance

Total amount invested
in Leaps Portfolio Companies
2015 – 2024

1.9+ Billion USD

Companies IPO'd
2024

Metagenomi
Boundless Bio

Total companies
invested in

60+

Companies entered and/or completed their Phase 1 clinical trials in 2023

6

New portfolio companies
announced in 2023

5

2023/2024 Media Highlights

Wired   May 16, 2023
—

The First Crispr-Edited Salad Is Here

READ

Washington Post   March 14, 2023
—

Pork without a pig? A New Jersey factory says it has found a way.

READ

WSJ   April 23, 2023
—

We`re Trying to Learn from Bats to Fight Human Disease

READ

Forbes   March 16, 2023
—

How Microorganisms Are Helping Farmers Capture Carbon

READ

BBC Future   December 16, 2022
—

What is the lowest-carbon protein?

READ

STAT News   May 16, 2023
—

Boundless Bio tests a cancer drug targeting once-mysterious DNA loops

READ

Wired   May 31, 2024
—

Gene-Edited Salad Greens Are Coming to US Stores This Fall

READ

The New York Times   March 25, 2024
—

Surgeons Transplant Pig Kidney Into a Patient, a Medical Milestone

READ

Ars Technica   February 1, 2024
—

The right bacteria turn farms into carbon sinks

READ

Leadership

Juergen Eckhardt is EVP and Head of Leaps by Bayer, the impact investment arm, and Head of Business Development, Licensing & Open Innovation (BDLOI) for the Pharmaceuticals division.

He is a medical doctor and venture investor in healthcare, biotech, and agriculture with more than 20 years of experience.

He is a strong believer that scientific breakthroughs can help us overcome some of humanity's biggest challenges, including to cure and prevent chronic disease and to feed an ever-growing world population in a sustainable way – in short: science for a better life.

In 2016, he joined Bayer to help start Leaps, focused on investments in breakthrough technologies in health and agriculture. He has been Head of Leaps since 2019. In September 2023, he also became Head of Pharma Business Development, Licensing & Open Innovation and a Member of the Executive Committee of Bayer Pharmaceuticals.

He holds an MD from the University of Basel, Switzerland, and an MBA from INSEAD in Fontainebleau, France.

Juergen Eckhardt
Head of Leaps by Bayer

Contact

Kira Peikoff

Kira Peikoff is a former journalist who covered emerging bio-technologies for publications including The New York Times, Newsweek, and Popular Mechanics.

She now leads communications for Leaps by Bayer.

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The 10 Leaps

Cure
genetic diseases

Why it matters: **There are over 10,000 known genetic disorders caused by mutations in a single gene, in multiple genes or by chromosomal abnormality. Some are life-threatening, while others cause severe health problems that significantly reduce quality of life. Most are currently not curable. We seek out platform-based solutions that could intervene at the gene level, with the aim to prevent metabolic diseases, degenerative conditions like Alzheimer's disease, and blindness.**

What if a baby born with cystic fibrosis or sickle cell anemia could be treated with cell and gene therapy in the first months of life, preventing these diseases from ever taking hold? What if medicines could address the root of the problem, preventing conditions with strong genetic predispositions?

Companies in our portfolio addressing this Leap

capstan therapeutics	In vivo cell engineering to tackle oncology, fibrosis, genetic disease, and autoimmunity	**CRISPR** THERAPEUTICS — Crispr / Cas9-based DNA-Editing for human health — Now a public company	**SENTI BIO** — Gene circuits that can be deployed into cell or gene therapy modalities — Now a public company
CASEBIA — Crispr / Cas9-based DNA-Editing for human health — acquired by CRISPR Therapeutics		**METAGENOMI** — First step towards broad access to gene editing IP for in-house therapeutic development, particularly for oncology — Now a public company	**Vesigen** THERAPEUTICS — Next-generation extra-cellular vesicle platform for efficient delivery of therapeutic
		ReCode THERAPEUTICS — Novel targeted LNP based non-viral delivery platform	

Provide
sustainable organ and
tissue replacement

Why it matters: **Some of the most important tissue in the human body—like heart muscles and nerve cells—cannot regenerate the way skin or bone can. Neither can irreversibly damaged or dysfunctional organs. Heart diseases are the leading cause of death worldwide, and there are an estimated 1.5 to 2 million people waiting for a donor organ globally, due to supply shortages. Several of the approaches that excite us include induced pluripotent stem cells (iPSCs) as a platform with the potential to address a range of indications and xenotransplantation to create a sustainable supply of organs.**

What if a patient's heart muscles could be fully restored after a heart attack, empowering their return to a full and healthy life? What if getting a new kidney was as simple as a hip or knee replacement, leaving patients untethered from dialysis? Advances in cell and gene therapies are bringing this future closer to reality.

**Companies in our portfolio
addressing this Leap**

BlueRock THERAPEUTICS — Creating and manufacturing iPSCs in the areas of neurology, cardiology, ophthalmology and immunology. Now a wholly-owned, independently operated subsidiary of Bayer as a cornerstone of its Cell & Gene Therapy Platform

eGenesis ENGINEERING HOPE — eGenesis strives to create a world with no shortage of human transplantable organs

KHLORIS BIOSCIENCES — Revolutionizing treatment and prevention of cancer with iPSCs for drug discovery, vaccine and cell therapies

RECURSION — Decoding biology by integrating biology, chemistry, data science and engineering to industrialize in silico discovery

Now a public company

SENTI BIO — Gene circuits that can be deployed into cell or gene therapy modalities

Now a public company

cellino — Combining AI/ML with precision laser editing and imaging to produce the 1st automated platform for iPSC manufacturing at scale

03 /
Reduce
environmental impact
of agriculture

AGRICULTURE

Why it matters: **The global population is projected to reach nearly 10 billion people by 2050. Modern agriculture is essential to feed this growing population, but efforts driving scale can also accelerate climate change, deforestation, and pollution. Globally, agriculture is the second largest producer of greenhouse gases and the largest consumer of water. We invest in companies that are driving a shift from 'more to better' in agriculture, meaning better use of land and resources, more regenerative practices, and win-win solutions for the diverse needs of people and our planet.**

What if we could fill our grocery carts with carbon-neutral produce, grown with dramatically reduced farming inputs? What if we could teach corn to extract nitrogen from the air like a soybean plant, enabling us to enjoy tortilla chips made without chemical runoff or excessive emissions? What if new technologies made it profitable for farmers to sequester enough carbon to remediate the effects of climate change?

**Companies in our portfolio
addressing this Leap**

AGBIOME Deep sequencing of >75,000 microbial genomes to identify ag traits and biologicals that protect crops	**Atomwise** Artificial intelligence / machine learning approach to drug and crop protection discovery	**CoverCress** A rotational cash crop which combines grain production with the environmental benefits of a cover crop, providing a source of high-protein livestock feed and renewable biofuel. Now majority owned by Bayer.
AMFORA Enhance protein content of plants (e.g. soybean)	**ChrysaLabs** Building the leading sustainability database for soil health and modeling platform using novel in-field soil sampling to digitally fingerprint soil	
andes Enabling ag biologicals by loading microbes into seeds and "carbon farming" inorganic carbon sequestration platform		**EARTH OPTICS** Data platform that provides a full-field soil map to inform tillage and carbon farming

03 /
Reduce
environmental impact
of agriculture

AGRICULTURE

**Companies in our portfolio
addressing this Leap**

GUARDIAN AGRICULTURE

Purpose-built large
drone deployment for
precision crop protection
application

JOYN BIO

Nitrogen fixation and
R&D assets now
integrated into Gingko
Bioworks in a strategic
partnership, with assets
allocated (50 / 50)
between Bayer and
Ginkgo

NewLeaf symbiotics®

Engineering plant-
colonizing facultative
methyltroph microbes
to improve crops and/or
deliver other technology

erthbío

Targeted protein degra-
dation for crop protection
and plant health

pairwise

Cpf1/Cas9 genome
editing and base editing
platform to improve
plants

RANTIZO®

Drone application of crop
protection, pollen, and
cover crops

Sound

Reduce a crop's needs
for synthetic fertilizer,
and access to rapid
non-GM/gene-edited
breeding

04 /
Prevent
and cure cancer

Why it matters: Cancer is the second leading cause of death globally, responsible for over 9 million deaths worldwide per year. In developed nations, nearly 1 in 2 adults risk developing cancer. Current diagnostic methods are insufficient to reliably detect many cancers early enough for successful therapy, let alone prevention in the first place.

What if every woman had access to a breast cancer vaccine, preventing millions of mastectomies and deaths? What if cell and gene therapies could cure the most resistant forms of cancer, like brain tumors? Today's most effective treatments are customized based on the patient's own cells, making them costly and time-consuming, and they are limited to certain cancer types only. In the future, the development of scalable, off-the-shelf solutions could democratize next-generation cancer immunotherapies and save millions of lives.

**Companies in our portfolio
addressing this Leap**

affini T	TCR therapies for solid cancer to overcome the immunosuppressive tumor microenvironment	capstan therapeutics	In vivo cell engineering to tackle oncology, fibrosis, genetic disease, and autoimmunity
ARVINAS	Creating a new class of drugs based on targeted protein degradation. Now a public company.	CENTURY THERAPEUTICS	Genetically engineered immune effector cell therapies, derived from iPSCs to target hematologic and solid cancers
BOUNDLESS BIO	Addressing oncogene amplification in cancer by targeting extrachromosomal DNA ("ecDNA")		Now a public company

DEKA BioSciences — Dual targeting cytokine based cancer therapies offer an enhanced therapeutic index while exhibiting low toxicity

dewpoint_x — Biomolecular condensates offer totally new pathways in biology

Now a public company

Prevent
and cure cancer

**Companies in our portfolio
addressing this Leap**

GRO BIOSCIENCES — Using NSAAs (Non-Standard Amino Acids) protein to unleash the full potential of therapeutic proteins

Immunitas THERAPEUTICS — Developing targeted therapeutics for patients with challenging, complex cancers by unlocking human immunology

INDAPTA THERAPEUTICS — Using G-NK cells with multi-fold increase in antitumor activity and longer persistence

KHLORIS BIOSCIENCES — Revolutionizing treatment and prevention of cancer with iPSCs for drug discovery, vaccine and cell therapies

Kojin TX — Novel disease biology with potential to treat resistant cancers and other indications

METAGENOMI — First step towards broad access to gene editing IP for in-house therapeutic development, particularly for oncology

nextpoint — Novel first in class immune checkpoint inhibitors unlock unaddressed patient population for targeted cancer therapies

paratus SCIENCES — Using bats biology to unlock new targets to improve human health

PYXIS ONCOLOGY — Discover novel checkpoint inhibitors for immune oncology applications to overcome toxicity and low penetration

Now a public company

RECURSION — Decoding biology by integrating biology, chemistry, data science and engineering to industrialize in silico discovery

Now a public company

SENTI BIO — Gene circuits that can be deployed into cell or gene therapy modalities

Now a public company

Triumvira — Advancing novel TAC technology for T Cell therapies that are safe and efficacious in solid tumors

Vesigen THERAPEUTICS — Next-generation extracellular vesicle platform for efficient delivery of therapeutic proteins, CRISPR-Cas9, and RNA molecules

Protect
brain and mind

HEALTH

Why it matters: **Mental health disorders and neurological diseases affect more than 1 billion people. Therapies for neurodegenerative diseases like Parkinson's disease and dementia have seen little progress in decades, with no disease-modifying therapies available today. We invest in companies building new technology toolboxes with the aspiration of reversing degenerative and developmental neurological diseases and regaining mental health.**

What if cell and gene therapies could be used to develop medicines that reverse the loss of brain cells in devastating diseases like Alzheimer's disease, ALS, or Parkinson's? Researchers are also beginning to untangle the human microbiome, establishing linkages between gut health, the immune system, and the brain. What if we could cure depression or anxiety by restoring microbiome health?

Companies in our portfolio addressing this Leap

BLOOM science — Commensal strains of gut bacteria to treat CNS (drug-resistant Epilepsy, ALS) and auto-immune (severe asthma) diseases

BlueRock THERAPEUTICS — Creating and manufacturing iPSCs in the areas of neurology, cardiology, ophthalmology and immunology. Now a wholly-owned, independently operated subsidiary of Bayer as a cornerstone of its Cell & Gene Therapy Platform

dewpoint x — Biomolecular condensates offer totally new pathways in biology

RECURSION — Decoding biology by integrating biology, chemistry, data science and engineering to industrialize in silico discovery

Now a public company

SENTI BIO — Gene circuits that can be deployed into cell or gene therapy modalities

Now a public company

Vesigen THERAPEUTICS — Next-generation extra-cellular vesicle platform for efficient delivery of therapeutic proteins, CRISPR-Cas9, and RNA molecules

Woebot Health — Behavioral therapy approaches to provide on-demand mental health-care with a fully automated, digital therapist

Reverse
autoimmune diseases and
chronic inflammation

Why it matters: **Autoimmune diseases are among the top 10 causes of death in women of all age groups. Around 5-8% of the population is affected by 80-100 different autoimmune diseases, like type 1 diabetes and lupus. When the immune system attacks the very tissue it is meant to protect, chronic diseases result. Current treatments are largely limited to suppressing the entire immune system, which lowers the body's ability to fight off infections and other diseases, like cancer.**

What if we could permanently reverse type 1 diabetes, enabling patients to cease daily insulin injections? What if we could develop precise tools that enable targeted regulation of the immune system? Researchers are exploring how iPSC and CRISPR/Cas9 can retrain T-cells to work in concert with other immune cells, delivering curative therapies. Novel metrics of inflammatory health could lead to personalized health interventions to improve healthspan.

**Companies in our portfolio
addressing this Leap**

azitra	Next generation solutions for skin diseases in daily management and therapeutic applications Now a public company	**dewpointx**	Biomolecular condensates offer totally new pathways in biology
BLOOM science	Commensal strains of gut bacteria to treat CNS (drug-resistant Epilepsy, ALS) and auto-immune (severe asthma) diseases	**EDIFICE HEALTH**	Tackling systemic chronic inflammation, the root cause of age-related diseases
capstan therapeutics	In vivo cell engineering to tackle oncology, fibrosis, genetic disease, and autoimmunity	**GRO BIOSCIENCES**	Using NSAAs (Non-Standard Amino Acids) protein to unleash the full potential of therapeutic proteins
DEKA BioSciences	Dual targeting cytokine based cancer therapies offer an enhanced therapeutic index while exhibiting low toxicity	**METAGENOMI**	First step towards broad access to gene editing IP for in-house therapeutic development, particularly for oncology

MOZART THERAPEUTICS Orchestrating The Immune System	CD8 T-cell immune modulators for the treatment of autoimmune diseases
paratus SCIENCES	Using bats biology to unlock new targets to improve human health
SENTI BIO	Gene circuits that can be deployed into cell or gene therapy modalities Now a public company
SUDO BIOSCIENCES	Designing and developing TYK-2 targeting drugs for inflammatory diseases such as psoriasis, psoriatic arthritis, and lupus

Provide
next-generation
healthy crops

AGRICULTURE

Why it matters: **The Green Revolution lifted millions out of starvation, yet new approaches are needed to provide comprehensive nutrition at a global scale. Climate change, threats to biodiversity, and consumer preferences are driving a seismic demand shift. Agriculture today faces a monumental challenge—to dramatically increase the quality, diversity, and nutrition of the food we grow, while reducing the use of land, water, and other inputs. We invest in companies developing next-generation breeding tools that could produce crops that are more nutritious and flavorful, stay fresh longer, and increase access to fresh produce.**

What if transformational new technologies could improve plants and growing systems to holistically nourish a global population? Improving the nutritional profile of staple foods like rice and soy could address malnutrition, which impacts millions in low-income countries. What if a cucumber could be packed with the nutritional density of kale, making it more appealing for kids to 'eat their greens'?

**Companies in our portfolio
addressing this Leap**

NuCicer

High protein, high
production varieties
of Chickpea and subsequent high protein
products

ukko

Design proteins that do
not trigger an immune
response for e.g. celiac
disease and to treat
peanut allergy

pairwise

Cpf1/Cas9 genome
editing and base editing
platform to improve plants

Sound

Reduce a crop's needs
for synthetic fertilizer,
and access to rapid
non-GM/gene-edited
breeding

Develop
sustainable protein
supply

AGRICULTURE

Why it matters: **According to the FAO (Food and Agriculture Organization of the United Nations), there are more than 19 billion chickens, 1.4 billion cattle and 1 billion pigs and sheep that require 80% of the world's available agricultural land. 36% of the world's crop calories are used for animal feed, and livestock contribute 14.5% of total greenhouse gas emissions—more than fuel consumption in transportation. From plant-based innovations to next-gen biotech, we seek out solutions that can deliver high-quality proteins for billions, while using a fraction of the resources required today.**

What if supermarkets everywhere offered a range of lab-grown meats, from pork to filet mignon to bluefin tuna? What if chickpeas and other plant proteins could be bred to be more nutritionally dense than conventional varieties? Alternative sources of protein could spare millions of hectares of natural ecosystems. Artificially produced meat could be healthier than conventional meat because it would remain free of pathogens and antibiotics.

**Companies in our portfolio
addressing this Leap**

AMFORA — Enhance protein content of plants (e.g. soybean)

FORK&GOOD — Cultivated pork, cracking the cost of goods challenge

NuCicer — High protein, high production varieties of Chickpea and subsequent high protein products

ukko — Design proteins that do not trigger an immune response for e.g. celiac disease and to treat peanut allergy

09 /
Prevent
crop and food loss

AGRICULTURE

Why it matters: **A pandemic, climate volatility, and an increasingly long and complex food supply chain have shown the importance of a globally resilient food system. Soil erosion, drought, freezing temperatures and extreme weather are increasingly severe and unpredictable. There is a growing need for digital technologies that can help growers worldwide manage their farm as well as for better systems to reduce the financial and environmental costs of food spoilage.**

What if AI, synthetic biology, and regenerative agriculture practices could be leveraged together to restore soil health, securing short and long-term crop yields? What if data-driven systems could provide predictive insights and optimization to everyone, not just the largest farms in the wealthiest nations? What if digital business models could better link farmers to markets, increasing consumer access, building trust, improving crop traceability and pricing transparency, and reducing food loss?

**Companies in our portfolio
addressing this Leap**

APOLLO AGRICULTURE — Small holder farmer digital business model based in Africa

EARTH OPTICS — Data platform that rovides a full-field soil map to inform tillage and carbon farming

grãodireto — Leading Brazilian online platform that connects growers to commodity buyers

Transform
health with data

HEALTH

Why it matters: **From wearable devices to artificial intelligence to protein modeling, AI and machine learning technology is sparking a revolution in medicine, transforming everything from diagnosis to treatment to drug discovery. We invest in companies at the intersection of biology and technology that are laying the groundwork for predictive, preventative, and curative medicine. We are excited by companies whose competitive advantage comes from a unique way of blending computational tools, wet lab science, and hardware engineering toward making impactful medicines or consumer-facing interventions.**

What if technology ushers in a new era of predictive medicine, enabling us to repair a young man's heart before he even experiences chest pain? What if AI could help predict which new therapies have the greatest statistical likelihood to cure a child suffering from leukemia? AI and machine learning could help target previously undruggable targets in drug discovery and speed up the development of novel medicines at scale. Imagine a massive amount of metagenomic data that could be analyzed to unlock 4 billion years of microbial evolution and identify new types of gene editing systems to treat uncurable genetic diseases.

**Companies in our portfolio
addressing this Leap**

ada
AI-driven symptom assessment app to revolutionize consumer care path across healthcare journey

care/of
Delivering personalized nutrition offering that fits the needs of each consumer

now majority owned by Bayer

cellino
Combining AI/ML with precision laser editing and imaging to produce the 1st automated platform for iPSC manufacturing at scale

EDIFICE HEALTH
Tackling systemic chronic inflammation, the root cause of age-related diseases

GANDEEVA THERAPEUTICS
Cryo-EM-based drug design in cancer, neurology, cardiology, and potential in Ag

HUMA
Transforming healthcare and research globally with 'hospital at home' and decentralized clinical trials

RECURSION
Decoding biology by integrating biology, chemistry, data science and engineering to industrialize in silico discovery

Now a public company

Breaking through impossible.

Together.

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