BREAKING THROUGH IMPOSSIBLE. TOGETHER.

ANNUAL REVIEW 2024

leaps

BAYER

THERE ARE THOSE WHO ENABLE, SO OTHERS CAN FLY.
THOSE WHO GUIDE, SO OTHERS BREAK BOUNDARIES.

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Key Milestones 2024

2+

billion USD

Total amount invested in Leaps portfolio
2015 – 2024

65+

# of portfolio companies
2015 – 2024

30+

New investments and follow-on investments
2024

CORXEL
Sudo Biosciences
Nuvig Therapeutics
one.bio
Decibel

New investments
announced in 2024

Health

Six of our portfolio companies entered Phase I clinical trials in 2024:

Affini-T Therapeutics
Indapta Therapeutics
Mozart Therapeutics
NextPoint Therapeutics
ReCode Therapeutics
Sudo Biosciences

Agriculture

Grao Direto and **Pairwise** announced independent collaborations with Bayer Crop Science with the aim of combining expertise to further advance innovations in crop health and embark on commercialization ambitions.

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ABOUT LEAPS

Juergen Eckhardt
Head of Leaps by Bayer

“Innovation isn’t just about advancing science; it’s about reimagining what’s possible for humanity. At Leaps by Bayer, we invest in bold ideas that have the power to rewrite the future and tackle the greatest challenges of our time.

2024 has been another remarkable chapter in this shared journey. Together with our portfolio companies, we continue to push boundaries, turning visionary ideas into meaningful breakthroughs. Each step brings us closer to realizing our 10 Leaps for a brighter tomorrow.”

Portfolio Overview
New Additions

We are truly proud of our collaborations with talented pioneers, visionaries, and leaders within our healthcare and agriculture portfolio. Meet some of the newest members of the Leaps family and learn about their vision, work, and ambitions.

CORXEL, formerly named Ji Xing Pharmaceuticals, is a leading biotech company headquartered in the US and China focused on developing innovative cardiometabolic therapies globally. Backed by RTW Investments, CORXEL was founded in 2019 and has been committed to bringing innovative science and medicines to underserved patients. With a strong and further developing asset pipeline for cardiometabolic diseases, industry leading talent, and a patient-centric focus, CORXEL is dedicated to deliver a meaningful and lasting impact on patients around the world.

CORXEL

"Our year 2024 at CORXEL was filled with multiple significant achievements. Recently, we announced the NDA approval of our first product since the company's establishment as well as two further NDA submissions, which are strong recognitions of our sustained efforts and our development capabilities. We are committed to continuously developing a high-potential product pipeline and strive to bring more innovative cardiometabolic therapies to patients globally."

Sandy Mou, CEO and Board Executive Director of CORXEL

"Sudo Biosciences is at the forefront of developing groundbreaking therapies that have the potential to transform the landscape of autoimmune and neurologic diseases. In December 2024, we announced our first participants dosed in the Phase 1 trial of a brain-penetrant allosteric TYK2 inhibitor. This is a therapy that could significantly advance the treatment of diseases such as multiple sclerosis, ALS, and Alzheimer's, empowering patients and addressing their unique health challenges."

Scott Byrd, Chief Executive Officer

SUDO BIOSCIENCES

Sudo Biosciences is opening up new, innovative avenues for immune-mediated inflammatory conditions. The company's pipeline includes treatments for multiple sclerosis and neurodegenerative diseases with underlying neuroinflammation and a further candidate for immune-mediated dermatologic diseases.

Portfolio Overview
New Additions

"We are delighted to partner with additional high-caliber investors, like Leaps by Bayer. Their scientific and strategic perspectives will support our efforts to diversify our pipeline. At Nuvig, our vision is to develop powerful and safe imune-modulating therapies in autoimmune therapeutic areas for patients who otherwise have limited treatment options. As we progress into Phase 2, we look forward to partnering with Leaps on this journey."

Pamela Conley, Ph.D., Cofounder, Chief Scientific Officer,
and founding Chief Executive Officer of Nuvig Therapeutics

NUVIG™
THERAPEUTICS

Nuvig Therapeutics aims to deliver novel methods for reducing autoimmune dysregulation without immunosuppression. The biotech company has already set its first milestone for success, with its recent announcement of its safe and well-tolerated Phase 1 dosing with their lead investigational drug candidate.

Lack of fiber intake and consequently malnutrition of the modern diet is at root of the public health crisis of today - modern inflammatory disease. The result has been an imposing spike in chronic inflammatory, cardiovascular and neurodegenerative diseases, autoimmunity, and cancers. **One Bio's** game-changing technology can add fiber into any food or drink, thereby reducing the harm of sugar, without you seeing, smelling, or tasting the difference.

one·bio

"One Bio puts thriving microbiomes to work delivering healthspan and aiding digestion. With the help of our technology that releases short chain fibers from thousands of plants, we aim to beat back inflammatory disease by reducing the toxicity of sugars and avoiding and reversing the negative impact of today's processed food diet, which accounts for 70% of calories consumed."

Matt Barnard, Co-founder and CEO of one.bio

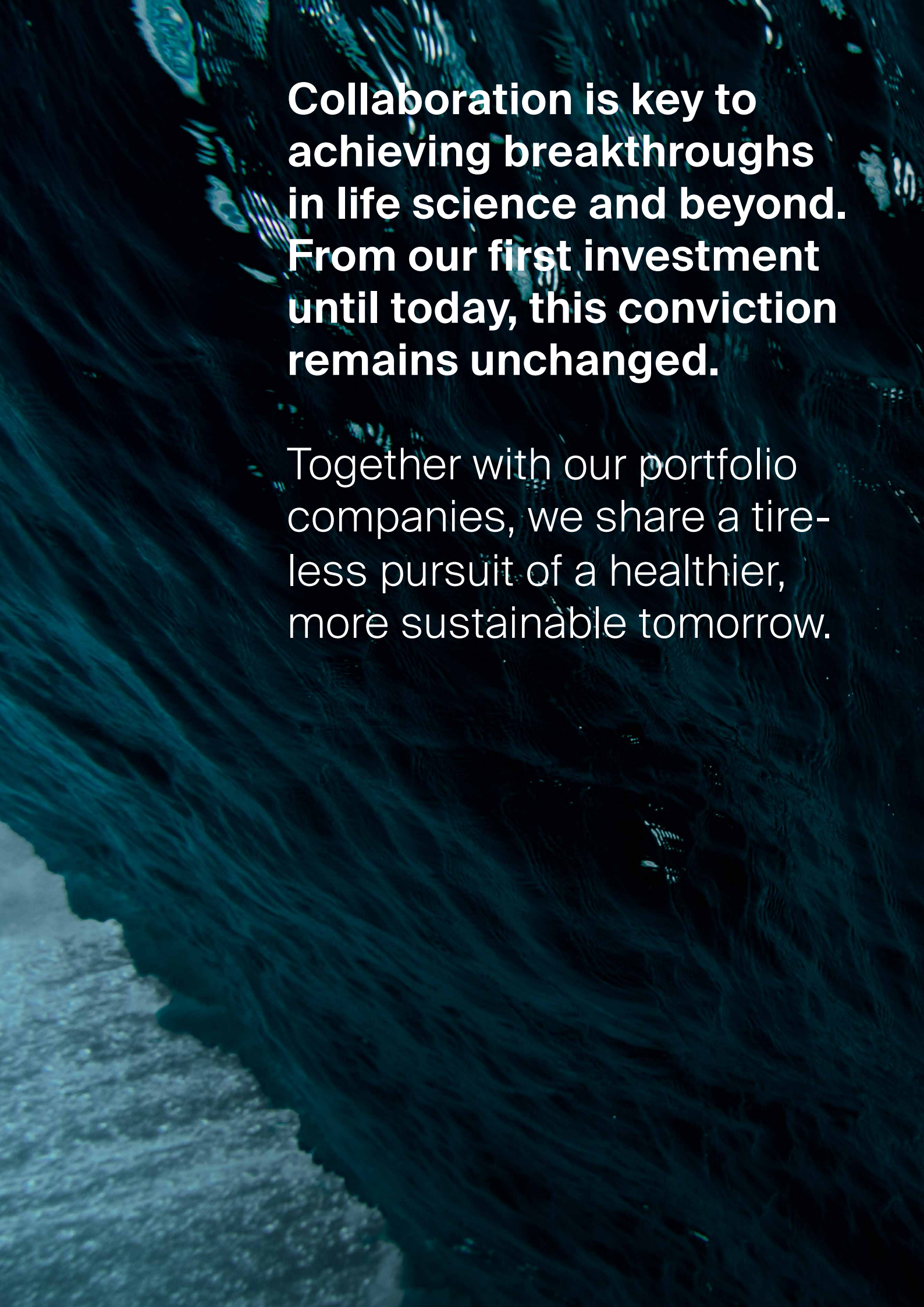
Portfolio Overview
New Additions

Decibel develops epigenetic technologies to alter crop traits without affecting DNA sequences. These can take the form of seed treatments or “sprayable traits”—allowing growers to select seeds and traits separately—a first of its kind solution for agriculture.

decibel

“During my time at Sound Agriculture, another Leaps portfolio company, I enjoyed working closely with the Leaps by Bayer team. Their expertise enriched our board with valuable commercialization expertise and decision-making support. I am excited to continue this partnership with Leaps at Decibel Bio, where we are creating the first platform for reading and writing the plant epigenome; adapting crops to changing climate, emerging diseases, and increasing productivity.”

Travis Bayer, CEO of Decibel



Collaboration is key to achieving breakthroughs in life science and beyond. From our first investment until today, this conviction remains unchanged.

Together with our portfolio companies, we share a tireless pursuit of a healthier, more sustainable tomorrow.

Leaps by Bayer aims to conquer ten huge challenges facing humanity. Some call them impossible. We call them Leaps.

By leveraging transformative technologies, we aim to tackle ten Leaps that could have the greatest impact on humanity. Our Leaps are the articulation of our goals, based on where our expertise as a company can make the biggest difference.

10 Leaps. 10 Huge Challenges.

01 / **Cure** genetic diseases

HEALTH

Stopping genetic diseases before they develop or progress could prevent chronic suffering and give many of us the chance to live a full and healthy life.

02 / **Provide** sustainable organ and tissue replacement

HEALTH

Cell and gene therapies hold tremendous promise to restore health, reverse the course of degenerative diseases, and prevent organ failure.

03 / **Reduce** environmental impact of agriculture

AGRICULTURE

From carbon sequestration to reducing land and water usage, innovation has the power to transform modern agriculture.

04 / **Prevent** and cure cancer

HEALTH

Biotechnology that leverages the immune system and other emerging platforms could make huge strides in the fight against cancer.

05 / **Protect** brain and mind

HEALTH

Neurodevelopmental and neurodegenerative diseases along with mental health disorders represent a massive and growing unmet need with no simple solutions available.

06 / **Reverse** autoimmune diseases and chronic inflammation

HEALTH

Systematically addressing autoimmune diseases and chronic inflammation could enable lives free of pain, disease management, and life-threatening conditions.

07 / **Provide** next-generation healthy crops

AGRICULTURE

The Green Revolution lifted millions out of starvation, yet new approaches are needed to provide comprehensive nutrition at a global scale.

08 / **Develop** sustainable protein supply

AGRICULTURE

Nourishing a global population will require new approaches to sustain both a healthy planet and healthy people.

09 / **Prevent** crop and food loss

AGRICULTURE

A pandemic, climate volatility, and an increasingly long and complex supply chain expose the fragility of our global food system and the need for resilience.

10 / **Transform** health with data

HEALTH

From wearable devices to artificial intelligence and protein modeling – digital technology is sparking a revolution in medicine.

Portfolio Company Achievements

Scientific Milestones Health

Pig liver to filter human's blood

For the first time, researchers at **eGenesis** have succeeded in connecting a functioning liver from a genetically modified pig to a human body. This achievement offers a possible temporary treatment for people with acute liver failure.

Phase I first patient dosed

NextPoint Therapeutics announced that it has completed a Phase 1 clinical trial for the treatment of patients with solid tumors expressing HHLA2/B7-H7, a tumor antigen that is strongly upregulated in many human tumors.

Preclinical data for lead hemophilia A program

Metagenomi announced data this year from an ongoing preclinical study designed to provide evidence of the potential durability and safety of the company's hemophilia A gene editing therapy MGX-001.

First kidney transplantation into a patient

Surgeons from **eGenesis** have transplanted a kidney from a genetically engineered pig into an ailing 62-year-old man, the first procedure of its kind. If successful, the breakthrough offers hope to hundreds of thousands of patients whose kidneys have failed.

Phase I with first patient dosed

Sudo Biosciences is pleased to confirm that this year the first participants have been dosed in a Phase 1 clinical trial evaluating a novel brain-penetrant allosteric inhibitor for the treatment of neuroinflammatory diseases.

First patient dosed in Phase 1/2

Recursion has announced that the first patient has been dosed in its Phase 1/2 clinical trial of REC-1245, a new chemical entity for the treatment of biomarker-enriched solid tumors and lymphoma.

First Phase II readout

Recursion is proud to inform that they tested a repurposed molecule called REC-994 in about 60 patients with symptomatic cerebral cavernous malformation, a rare neurological disorder that can cause strokes, seizures, and partial paralysis.

BlueRock was founded in 2016 as a joint venture of Versant Ventures and Leaps by Bayer. In late 2019, BlueRock became a wholly owned, independently operated subsidiary of Bayer AG as a cornerstone of its newly formed Cell & Gene Therapy platform.

Cell therapy for Parkinson's disease with positive data

BlueRock Therapeutics announced in September positive 24-month data from exPDite, a Phase 1 clinical trial of bemdaneprocel, an investigational cell therapy for the treatment of Parkinson's disease.

Positive trends in clinical trial for Parkinson's disease

BlueRock Therapeutics investigational cell therapy bemdaneprocel has continued to be well tolerated with no major safety issues in all 12 participants in low and high dose cohorts through 18 months in the Phase 1 clinical trial for Parkinson's disease.

Approval for Regenerative Medicine Advanced Therapy (RMAT)

BlueRock Therapeutics has announced the investigational cell therapy bemdaneprocel for the treatment of Parkinson's disease. This positive data from the bemdaneprocel Phase I clinical trial has great potential to help patients living with Parkinson's disease regain functions they have lost to the disease.

FDA clearance for primary photoreceptor diseases

BlueRock Therapeutics is pleased with the immense progress they have made this year and proud to announce that the FDA has cleared their IND application to initiate clinical testing for the first iPSC-derived investigational cell therapy to be clinically tested for treating primary photoreceptor diseases.

Phase I a/b clinical study

Mozart Therapeutics announced the dosing of the first cohort of participants in the company's initial clinical study of MTX-101, a novel approach to restoring immune homeostasis - aiming to achieve safer, more effective, targeted approaches to preventing and treating chronic debilitating autoimmune diseases.

Phase I program with first patient dosed

Affini-T Therapeutics has announced that the first patient has been dosed in the company's Phase 1 clinical trial evaluating AFNT-211 targeting KRAS mutations (G12V). Affini-T's goal is to address the significant unmet need of patients with difficult-to-treat solid tumors.

Phase 1b clinical study with first patient dosed

ReCode Therapeutics has announced that the first patient has been dosed in a Phase 1b study evaluating RCT2100, an investigational inhaled mRNA therapy for people with cystic fibrosis.

FDA clearance for Phase I trial

Indapta Therapeutics has announced this year that the U.S. FDA has cleared the IND for the company's Phase 1 clinical trial of its g-natural killer (g-NK) cell therapy, in progressive multiple sclerosis.

Portfolio Company Achievements

Scientific Milestones Agriculture

First tasting of hybrid cultivated meat

Fork & Good organized the very first tasting of hybrid cultivated meat in Davos this year. The food startup shared its product with thought leaders and local residents at its first large-scale tasting since the launch of its pilot facility in 2023.

First commercial product

Amfora announced the launch of its first commercial offerings - the company's first generation of ultra-high quality plant protein products (Ultra-High Protein Soy flour, Texturized Vegetable Protein and Crisps). The products use conventional breeding technologies to naturally contain protein content that is approximately 25 percent higher than conventional soybeans.

First EPA-registered biocontrol technology

NewLeaf Symbiotics has this year announced the launch of its first EPA-registered biocontrol technology to repel Corn Rootworm (CRW) pest activity and help corn varieties grow to their fullest potential with stronger roots. NewLeaf's technology introduces a new mode of action for CRW control, priming the plant's own defenses to produce a compound that repels larvae at the root.

1 million physically mapped acres

EarthOptics has announced this year that it has mapped and physically measured one million acres of farmland and ranchland. The important milestone places the company and its SoilMapper™ platform in the top market position, demonstrating a growing demand among farmers and ranchers for comprehensive soil intelligence.

FAA approval for drone operations

Rantizo achieved a major milestone in drone operations with the approval of rotary-wing operators to swarm up to three drones weighing more than 55 pounds without a visual observer and at night.

First seedless blackberry

Using the company's proprietary Fulcrum™ platform, a complete suite of novel tools for CRISPR application in plants, **Pairwise** has succeeded in achieving seedlessness in a caneberry for the first time.

USDA exemption confirmations

Pairwise received approval from the USDA for nine new exemptions that will allow the company to accelerate innovation and bring differentiated new products to market. These new nine bring the total number of Pairwise's confirmed trait exemptions for berries to 19, which include seedless, thornless and higher-yielding traits in blackberry and black raspberry.

New nutrition efficiency solution

Sound Agriculture has announced this year offerings built to help growers manage risk as they improve soil health and strengthen their nutrient mix. Grower incentives for synthetic fertilizer replacement and a new beneficial fungi product that enhances nutrient and water uptake will help growers optimize their nutrients and boost crop yields.

New approaches to herbicide and bioherbicide discovery

While the vast majority of the PROTAC development is strictly focused on human health, **Oerth Bio** is the lone pioneer in developing PROTACs for agricultural use. A Cambridge University paper published in October mentioned the company's proprietary platform called ATTUNE™, which is PROTAC's first agricultural discovery engine. As E3 ligases are essential for enabling PROTAC activity, Oerth Bio focuses on identifying kingdom- and phylum-specific E3s to dial-in applications specific to crop protection.

Portfolio Company Achievements

Partnering Milestones

Licensing agreement for heart disease program

Bayer obtained a global license from **Dewpoint Therapeutics** to develop and commercialize disease-modifying treatment specifically for dilated cardiomyopathy (DCM) patients characterized by specific mutations. Additionally, the collaboration allows Bayer to utilize Dewpoint's proprietary platform for biomolecular condensates to develop new treatment methods for cardiovascular and kidney diseases.

New licensing agreement

Bayer acquired a license from **Pairwise**, an agricultural startup that develops new genomic technologies for the development of innovative products. The acquired license allows Bayer to market the genome-edited brown mustard, a type of cabbage plant, and to work with the underlying technology developed by Pairwise. The cabbage plant modified by Pairwise is the first genome-edited food to be approved for the North American market.

Merge to digitize soil health for climate and agriculture

EarthOptics and **Pattern Ag** have merged this year to create a category-leading company focused on digitizing soil health for advanced crop management and climate sustainability, providing a comprehensive "digital twin" of soil, including physical, chemical, and biological properties. The merger combines EarthOptics soil sensing technology with Predictive Agronomy from Pattern Ag and their metagenomic database, enabling exponential growth in data generation and predictive forecasting, driving farm profitability and productivity.

New digital offering

Grao Direto and **Bayer** announced this year the commercialization of a new digital offering called Barter View in Brazil.

5 year joint venture collaboration

Following **Corteva's** investment in **Pairwise**, the two companies have entered into a five-year joint venture collaboration focused on accelerating the pace of genetic modification and developing improved products that are more resilient to future climate conditions.

Partnership for buying and selling grains

BASF and **Grão Direto** have announced a partnership in the Brazilian market. The focus of the partnership is to expand the options for marketing and digital bartering of grains, especially soybeans and corn, through a portfolio of products and services offered by Grão Direto.

Recognitions

Boundless Bio IPO

Boundless Bio went public with a $100 million IPO. The shares began trading on the Nasdaq Global Market under the ticker symbol “BOLD”.

Metagenomi IPO

Metagenomi announced in February 2024 the closing of its previously announced initial public offering andthe shares began trading on the Nasdaq Global Select Market on February 9, 2024 under the ticker symbol “MGX”.

America’s top green-tech companies 2024 by TIME and Statista

Pairwise, Sound Ag, and **Cover Cress** have been recognized by TIME Magazine as one of America’s Top GreenTech Companies 2024. To determine these, Statista analyzed data points such as value of the company's intellectual property portfolio, revenue and funding, and environmental data specific to each industry, such as carbon capture, offsets, and renewable energy generated.

Endpoints 11 honoree

Every year, the Endpoints 11 awards are lent out to the 11 early-stage companies making the biggest bets with the most ambitious science. This year, **Capstan Therapeutics** was nominated for their effective in vivo CAR-T cell therapies. Capstan is bridging the worlds of its esteemed scientific founders from the University of Pennsylvania, including Nobel laureate Drew Weissman, CAR-T cell therapy pioneer Carl June, and cardiologist and stem cell biologist Jonathan Epstein.

Bloomberg’s 2024 BNEF Pioneers Award

Cover Cress is one of the winners of the 2024 Pioneers Award recognizing 11 early-stage companies working to introduce technologies and products that will accelerate global decarbonization and halt climate change.

TIME Magazine 200 Best Inventions

Ada Health, Guardian Ag, and **Pivot Bio** were mentioned in the exclusive TIME's Best Inventions 2024 list. To compile this year’s list, TIME solicited nominations from its editors and correspondents around the world, and evaluated each contender on a number of key factors, including originality, efficacy, ambition, and impact.

ARPA-H funding

The Advanced Research Projects Agency for Health (ARPA-H), an agency within the U.S. Department of Health and Human Services, has announced the funding of the NExt-generation Biomanufacturing ULtra-scalable Approach (NEBULA) project. **Cellino** is leading the project with up to $25 million in research funding from ARPA-H over the next five years.

Fast Company Next Big Things in Tech 2024

This year, **Pairwise** was selected by Fast Company as one of the Next Big Things 2024. Each year a panel of 19 Fast Company editors and writers selects winners spanning 28 categories, including AI and Data, Space and Telecom, and Health.

Digital Health Hub Foundation Award

Ada Health has won the Consumer Wellness category at the Digital Health Hub Foundation Awards at HLTH USA 2024. Ada Health is on a mission to make healthcare accessible and understandable for everyone, everywhere.

Top Boston Start-ups by LinkedIn

Cellino ranked #3 on the 2024 LinkedIn Top Startups List in Boston. The list is built on LinkedIn data across four key pillars: employee growth; jobseeker interest; member engagement within the company and its employees; and how well these startups have pulled talent from LinkedIn Top Companies.

Interview with Shinya Yamanaka
2012 Nobel Prize Laureate

In 2024, Juergen Eckhardt had the honor of interviewing Nobel winner Shinya Yamanaka, the discoverer of induced pluripotent stem cells, about the state of the field now almost twenty years later, and the most promising clinical trials that may yield new and approved treatments for patients in the coming years. This excerpt has been edited and condensed.

Juergen: Professor Yamanaka, I'm really thrilled to be able to talk to you today. My very first deal with Leaps was founding BlueRock at the time, and part of that, of course, was that we needed to get a license for the Yamanaka factors.

Shinya: Wonderful.

Juergen: Globally, how many clinical trials are now underway using iPSC?

Shinya: So in Japan, in the US, in China, and in other countries, in total there should be more than 50 clinical trials that are going on. Cornea disease is actually very promising. They can make a transparent sheet of cornea from iPS cells. So by replacing a damaged cornea with iPSC-derived cornea, the effect is remarkable. Patients can see.

Yeah, it's probably the most promising result. The question is, how long those sheets can keep transparency? That's what we don't know. We hope for many years. But even if it gets dark, we can put another one on very easily because that's the beauty of iPS cells. We can make tons of iPS cells and we can make tons of cornea sheets out of iPS cells.

Juergen: You may have seen that BlueRock just gained FDA clearance to begin a trial of an iPSC-derived therapy for primary photoreceptor disease, so back of the eye disease. Do you see any other applications for iPSCs?

Shinya: There are many. Like Parkinson's disease is very promising. But I would say iPSC-derived cancer immunotherapy is also very promising. We now see very good outcomes of CAR T therapies for leukemia. But it takes some time and it's very expensive at the moment. So instead of using patients' own T cells, we could make CAR T cells from iPS cells. So it's an off-the-shelf approach. I believe that is very promising.

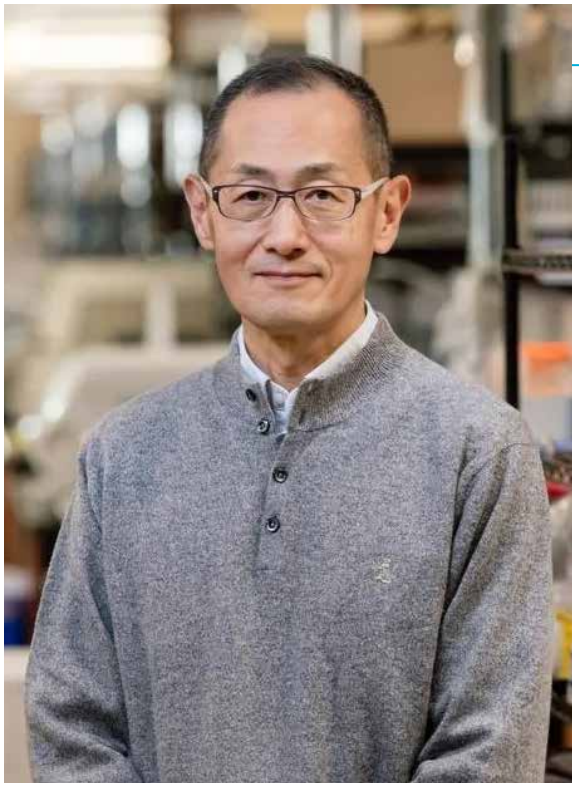
It won't replace the current autologous CAR T cells, but it's complementary. While waiting for cell production, we can try iPS cell-derived CAR T cells immediately. It's much cheaper and it's much faster.

Juergen: Agreed.

Shinya: Because at the moment, it takes at least four, five, six weeks to prepare for autologous CAR T cells. During that period, some patients may die, actually. But we could try iPS cell-derived CAR T cells during that period. And we can know if it would be effective or not. So, if it turned out to be effective, we can move on to the conventional autologous CAR T cells because we know it should work.

Juergen: As you said, if it's off-the-shelf, hopefully it's also going to be cheaper and hopefully more broadly available to patients around the world. Are there any other therapeutic applications that you are particularly excited about for iPSC?

Shinya: Yes, there are many applications. We have spinal cord injuries, heart failure. Heart failure is probably very important in Japan because we cannot do many heart transplantations because brain death is not widely accepted in Japan. So many people suffering from heart failure are actually dying while waiting for a heart transplant. As an alternative, iPSC-derived heart cells are very promising in countries like Japan. Also Parkinson's disease, type 1 diabetes, and my colleague in Kyoto, is making platelets from iPS cells. So we could use those cells in blood transfusion.



> **“Within 5 or 10 years, we won’t have enough blood donors. So making platelets, or even red blood cells from iPS cells, is actually very important.”**

Shinya Yamanaka
Senior Investigator at Gladstone Institutes;
Director Emeritus and Professor at the Center for iPS Cell Research and Application (CiRA) at Kyoto University

It’s very important in growing societies like Japan because we have more and more elderly patients who need blood transfusions. Within five or 10 years, we won’t have enough blood donors. So making platelets, or even red blood cells from iPS cells, is actually very important.

And now we have organoid technology. Many scientists are now working on kidney organoids, liver organoids, even brain organoids. That means we may be able to help patients suffering from kidney failure. So instead of doing lifelong dialysis, we can transplant kidney organoids to those patients.

Juergen: Very exciting.

Shinya: It's not scientific fiction anymore. It could happen in the future, and we could save lots of money.

Juergen: When do you think we will have the first approved iPSC therapy on the market and for what education?

Shinya: Very soon. Like corneal application, the effect is obvious and it’s very safe, so that may be the first application, and Parkinson’s disease is very promising as well. And maybe cancer immunotherapy because the end-stage cancer patients, they definitely need new therapies and once again, CAR T is available, but not for all patients. So I believe it won't be very long from now.

Juergen: What are you working on now in your lab?

Shinya: Oh, it’s a good question. So, 35 years ago when I was a postdoc, I identified one gene, and I’m still working on that gene. It’s like my child. It’s still a mysterious gene. We believe it’s very important, but we need to work on it.

Juergen: Thank you so much. It was really great talking to you.

Photo:
Michael Short/Gladstone Institutes

OUR 10 LEAPS IN MOTION PICTURES

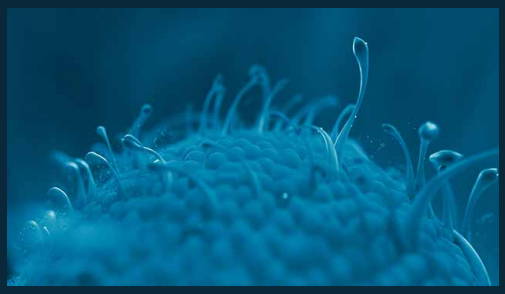
Our ten Leaps are at the core of our investment approach. They reflect our ambition to tackle the biggest challenges, with consideration for how Bayer's 150 years of expertise can most make a difference.

01 /
Cure
genetic diseases

02 /
Provide
sustainable organ and tissue replacement

03 /
Reduce
environmental impact of agriculture

04 /
Prevent
and cure cancer



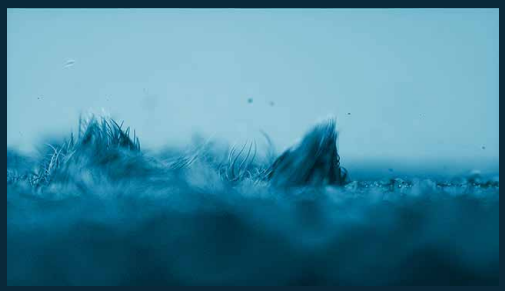
05 /
Protect
brain and mind

HEAD TO OUR YOUTUBE CHANNEL TO EXPERIENCE ALL OUR 10 LEAPS IN VIDEO FORMAT:

leaps

06 /
Reverse
autoimmune diseases and chronic inflam-mation

07 /
Provide
next-generation healthy crops



08 /
Develop
sustainable protein supply

09 /
Prevent
crop and food loss

10 /
Transform
health with data

Forbes Opinion Pieces by Juergen Eckhardt
My Favorite Top 3 Picks

One of my personal milestones of 2024 has been publishing a column on the Forbes contributor network as an expert voice on innovation. Every two weeks, I share an article covering scientific advancements in the biotech world. While every piece is dear to my heart, I would like to share with you my favorite top 3 picks.

Forbes®

3 Ways The New Administration Could Speed The Path To New Medicines

It's a profound loss when groundbreaking medical technologies, developed over years of dedicated research, are held back by regulatory obstacles. In this piece, I call on the new U.S. legislative landscape to champion policies that truly support medical progress: by strengthening patent protections, revising the IRA's "pill penalty" to preserve small molecule innovation, and advancing the Pasteur Act. Taking these steps could transform how we navigate regulatory pathways, ultimately helping more patients benefit from the promise of cutting-edge therapies.

READ FULL ARTICLE

Smart Antibiotics Could Fight Infections While Sparing The Gut

Antimicrobial resistance is a silent crisis that I believe deserves far more attention. Each year, drug-resistant infections claim an estimated 1.27 million lives globally, and yet the threat of AMR is still underestimated. New innovations, however, offer a glimpse of hope. Unlike traditional antibiotics, which can disrupt the microbiome and lead to lasting side effects, these next-generation therapies aim to target infections with unprecedented precision, minimizing collateral damage to the body's natural defenses. I'm excited about the potential of these therapies to transform how we combat resistance, ultimately leading to better patient outcomes and a healthier world.

READ FULL ARTICLE

An Ingenious Technology Could Change Both Medicine And Agriculture

One emerging technology I believe could reshape both healthcare and agriculture is PROTACs (proteolysis-targeting chimeras). In agriculture, PROTACs might offer new solutions for pest control, enhance crops' resilience to heat, improve water use, and reduce reliance on fertilizers. In healthcare, early applications of PROTACs are showing promise, from cancer treatments to addressing neurodegenerative diseases like Parkinson's and even targeting vector-borne illnesses such as malaria and dengue. This cross-industry applicability across fields underscores the vast potential of this technology to meet pressing global needs and aligns perfectly with Bayer's dual focus in healthcare and crop science.

READ FULL ARTICLE

Community Engagement 2024

In 2024, Leaps by Bayer marked a year of groundbreaking scientific and partnership milestones, complemented by dynamic participation in thought-leader events and conferences.

We began the year with a successful reception at the JP Morgan Healthcare Conference, setting the tone for an exciting year ahead. Our East Coast "Breaking Through Impossible — The Escape Game" College Campus Tour followed, engaging students at North Carolina State University, the University of Illinois at Urbana-Champaign, and the MIT Science Fair Festival in Cambridge, Boston.

The year concluded with standout industry engagements, including an exclusive investor dinner during the World Agri-Tech Innovation Summit in London and a reception at the Jefferies Healthcare Conference in November.

World Agri-Tech Innovation Summit

Held in London, the World Agri-Tech Innovation Summit is Europe's premier agtech event, driving advancements in sustainable, climate-resilient agriculture. The 2024 summit welcomed over 900 agri-food businesses, technology companies, startups, and investors. We were delighted to host an invite-only investor networking dinner, providing a platform for meaningful connections and potential collaborations.

Jefferies Healthcare Conference

Celebrating its 15th anniversary, the Jefferies Healthcare Conference remains Europe's largest healthcare gathering, attracting top executives from pharmaceuticals, biotechnology, and healthcare services. With over 300 invited guests, our Leaps reception served as a valuable space for investors and entrepreneurs to connect, fostering vibrant conversations on current trends and future opportunities in healthcare.

JP Morgan Healthcare Conference

JP Morgan Healthcare Conference is the largest and most comprehensive healthcare investment gathering in the industry, which connects global industry leaders, emerging fast-growth companies, innovative technology creators, and members of the investment community. With creative meeting spaces for our portfolio companies, thought-provoking 1-1 sessions, and more, we created the most vibrant biotech start-up event at JP Morgan.

BREAKING THROUGH IMPOSSIBLE

The Escape Game

College Campus Tour

Cambridge Science Festival
MIT Open Space Campus

UIUC, University of Illinois
Urbana-Champaign Campus

NCSU, North Carolina State
University Campus

Our Leaps by Bayer Escape Game captivated over 600 students at three U.S. college campuses in 2024. The immersive experience placed participants in an undersea lab where they teamed up to rescue a research specimen poised to change the world. Combining puzzles, teamwork, and high-stakes problem-solving, players felt the thrill of landing a biotech breakthrough while stepping into the role of groundbreaking scientists.

Interview with Carl June
2024 Breakthrough Prize in Life Sciences

Renowned scientist Carl June, the father of CAR T-cell therapy, spoke with Juergen Eckhardt for his column in Forbes about the remarkable advances in clinical trials in 2024, including progress in the treatment of glioblastomas as well as autoimmune diseases. An excerpt of their inspiring conversation is shared here.

Juergen: Carl, it's a pleasure meeting you. It's incredible to see how far CAR T has come in just a few decades. We have six FDA-approved therapies and around 35,000 patients treated to date with hundreds of clinical trials in progress. Where do you see the future of CAR T allogeneic or autologous, or a mix of two?

Carl: I think we're going to have both allo and autologous cells in the coming future. And that's because the autologous cells have a really good demonstrated track record of safety and ability to persist long time for about at least a decade. It's a true living drug. And we haven't gotten there with allogeneic cells. So they have the clear advantage of cost of goods and better scalability. But I don't think we ever actually want an allogeneic cell to persist long term because I think they're more of a safety risk.

I think there's going to be a sweet spot for them for a couple of months and that really looks like an autoimmune disease. You just need it for a very short period of time. But for cancer, I think that all the data from checkpoint therapies and cell therapies says long-term persistence matters. So that's why I think they're going have independent uses.

Juergen: Since you mentioned cancer, what's your perspective on CAR Ts to treat solid tumors, which has proven more difficult than some of the liquid ones? But we've seen some early promising data for glioblastoma, for example.

Carl: I think 2024 is going to be in hindsight regarded as the year of the breakthrough for glioblastoma and solid cancers. And it happened initially in pediatrics for this midline tumor called diffuse pontine gliomas. And the pediatric tumors in general are simpler than adult tumors.

Now three groups this year, ours included, showed promise using next generation CARs for adult glioblastoma...So I think five years down the line, we're going to have FDA-approved CARs for glioblastoma.

Juergen: That's a great perspective for patients with this terrible disease. Basically we have nothing today for these patients, right?

Carl: No, it's the same thing basically other than these magnetic fields. It's the same as back when I was in medical school.

Juergen: And 95% mortality in what two years or something like that; it's a terrible disease. So that gives hope to many patients. Now talk about excitement. What's your outlook on using CAR T to treat lupus, other B-cell indications, or any other autoimmune disease?

Carl: As I said, in the case of cancer, 2024 is the breakthrough here for glioblastoma. And in the case of going beyond cancer, it's autoimmune disease. And it's such an amazing story. I have had many students over the years, collaborations from Geneva and Germany. And so my friends there, it was Andreas Mackensen and Georg Schett, did a trial that because of the unique regulatory infrastructure in Germany where if you had at a single hospital of exemption, you didn't have to get Paul Ehrlich Institute approval and you could get IRB approval and treat on a case by case basis. Then this year in February, they published their first 15 patients. And they had 100% response rate.

And it was in three autoimmune diseases, myositis, scleroderma, and lupus. I did a search on clinical trials.gov when I was at the EULAR meetings in Vienna a few weeks ago, and there

were 44 trials open in the world now targeting autoimmune disease with CAR T-cells. So, that's going to happen. That's a train that's left the station.

Juergen: Amazing. Do you think that in the future most CAR T approaches will shift to become in vivo since it has obviously the advantage of being maybe more efficient, faster, and theoretically easier on patients?

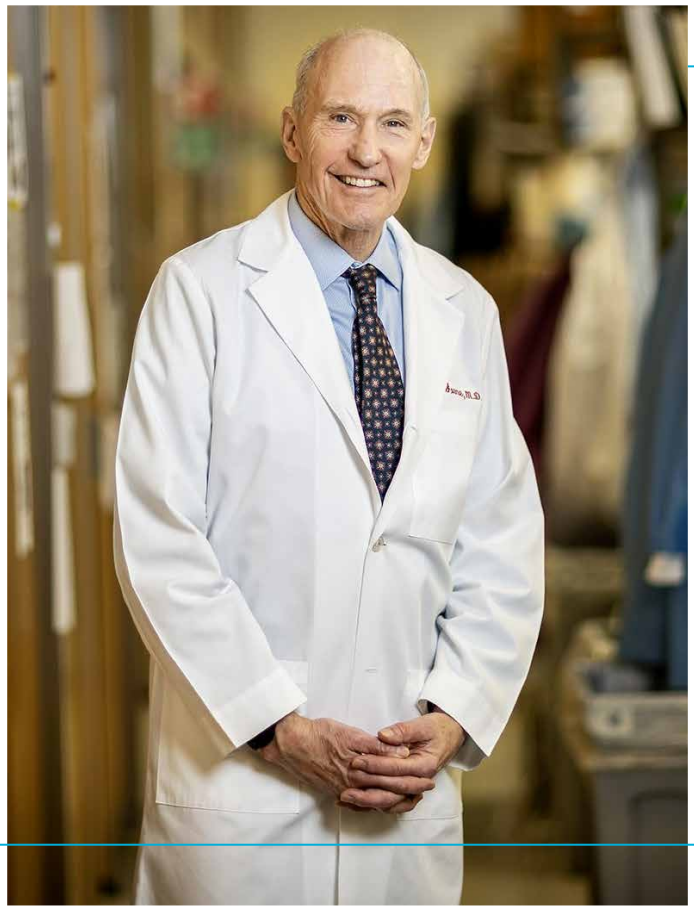
Carl: Well, I think it's the same calculus as we have in allogeneic cells versus autologous, except it just takes it further down because the cost of goods could be even lower with in vivo modalities. The one advantage autologous will have is you can do multiplex genetic engineering, ex vivo, I mean, with base editing and all these different modifications after CRISPR-Cas9. Basically metabolically rewiring the whole T-cell I think is going to be necessary in some solid tumors. And I don't see that happening in my lifetime with in vivo engineering.

Juergen: So there's a place for autologous, for allo and for in vivo. Now Carl, I've heard you say that your mind is often working on a problem, or that you have an insatiable drive to push for answers. So what's the scientific problem that consumes you these days?

Carl: The thing that every day I wake up thinking about is this issue of the solid tumors, how to rewire and make and create a synthetic cell that can actually survive in the toxic solid tumor like glioblastoma or pancreatic cancer.

Juergen: Yeah. Got it. Just one final question, if I may. What's the most important lesson you have learned in your storied career?

Carl: I think in one case it's persistence, not giving up on the problem. Although at some point you need to know when to stop. And so that's probably the hardest thing, it's kind of an art.



> **"And we're at this amazing turning point, a real inflection point in cell therapies."**

Carl June
Professor at the Pennsylvania Perelman School of Medicine

And I've also learned that my sweet spot is actually mentoring younger students. There are so many bright students coming into this that it's really exciting. And we're at this amazing, I think, turning point, a real inflection point in cell therapies.

Juergen: Yeah, very cool. Thanks a lot, Carl. The highlight of my day, for sure. Many thanks for taking the time.

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The Ag Playbook
A white paper on how to bring AgTech products from concept to market

READ MORE IN THE AG PLAYBOOK 2024

A comprehensive guide designed to help startups, investors, and industry players navigate the complexities of bringing new products to market.

Earlier this year, Leaps contributed to the publication of the Ag Playbook — a comprehensive guide designed to help startups, investors, and industry players navigate the complexities of bringing new products to market.

From understanding R&D costs and timelines to partnering with established players, this Playbook offers a common framework to evaluate and develop AgTech innovations more effectively. Whether you're an AgTech entrepreneur, investor, or industry leader, this Playbook will serve as your roadmap to help feed the world sustainably. In the fast-evolving world of AgTech, startups are constantly faced with tough questions. Bringing new agricultural innovations to market is hard, especially when there's no standardized process to follow.

> What data proves your product works?
>
> What milestones have you achieved?

Phases of Ag product development

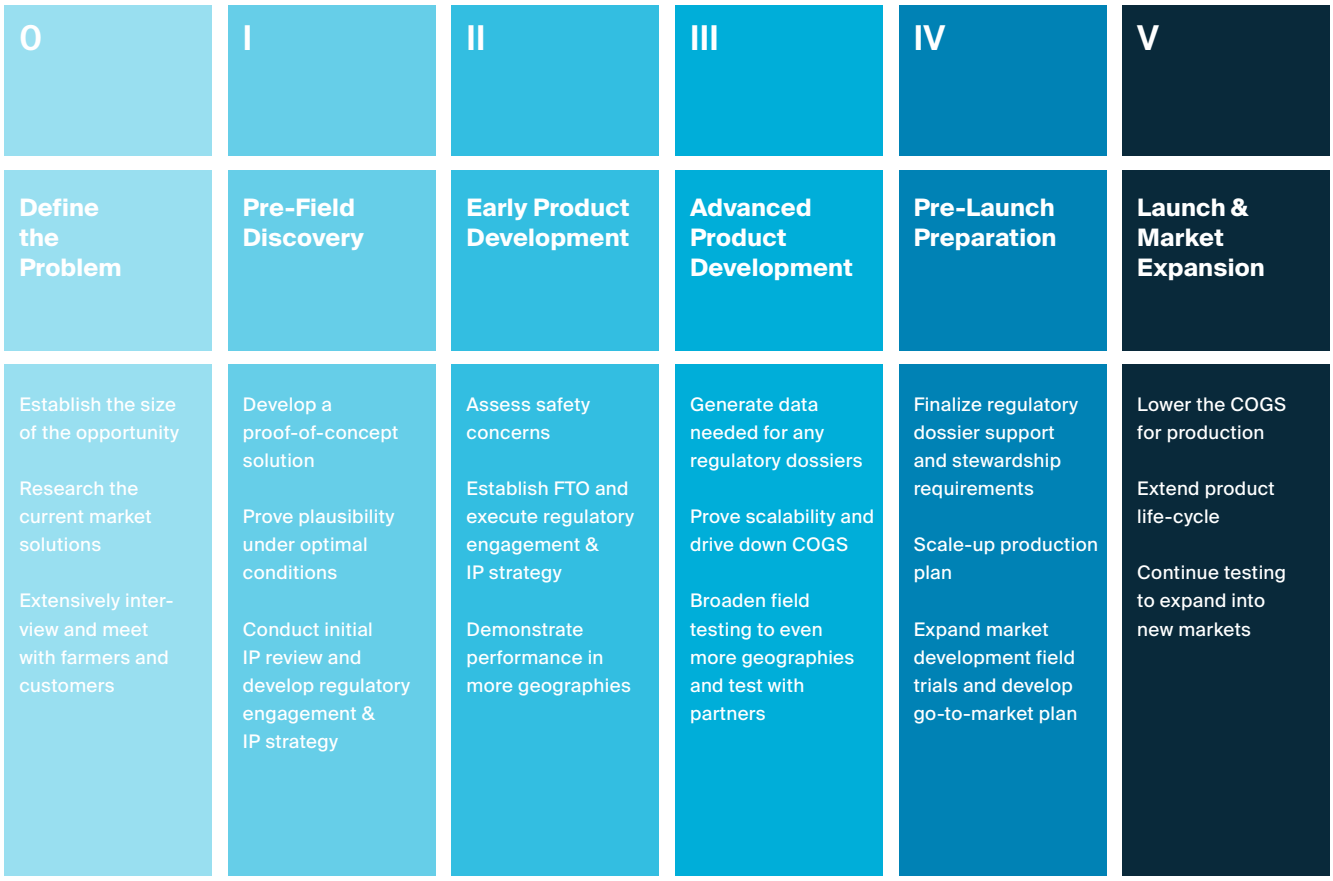
Navigating the journey from concept to commercialization in AgTech can be a daunting task. This graphic illustrates the 5 key phases of Ag product development, providing a roadmap for startups, investors, and industry leaders alike.

Unique challenges

Each phase presents unique challenges, from defining the problem in the initial stages, to pre-launch preparation and eventual market expansion.

Understanding risks and costs

Understanding the risks and costs at each phase can make or break a product's success. The further along you get, the more time and money is spent, but the lower the risk of failure becomes.



Measuring Impact
Executive Summary of our first Impact Report

In our first-ever Leaps Impact Report, we showcase the impact magnitude our Leaps portfolio can have if the technologies within our portfolio become successful.

The world is currently grappling with a multitude of pressing global challenges that threaten human health, climate, and food security on an unprecedented scale. In an economy with limited resources, informed decision making is crucial. Together with the Happiness Research Institute, we have found an underlying unit - wellbeing - that allows us to assess the potential magnitude an innovation/technology can have on humanity, if it becomes successful. The beauty behind this approach is its universal application for both healthcare and agriculture technology. In the past, we have measured impact within healthcare and agriculture separately.

However, by measuring a technology's impact based on its potential to change human wellbeing, we have found a metric that works in both healthcare and agriculture.

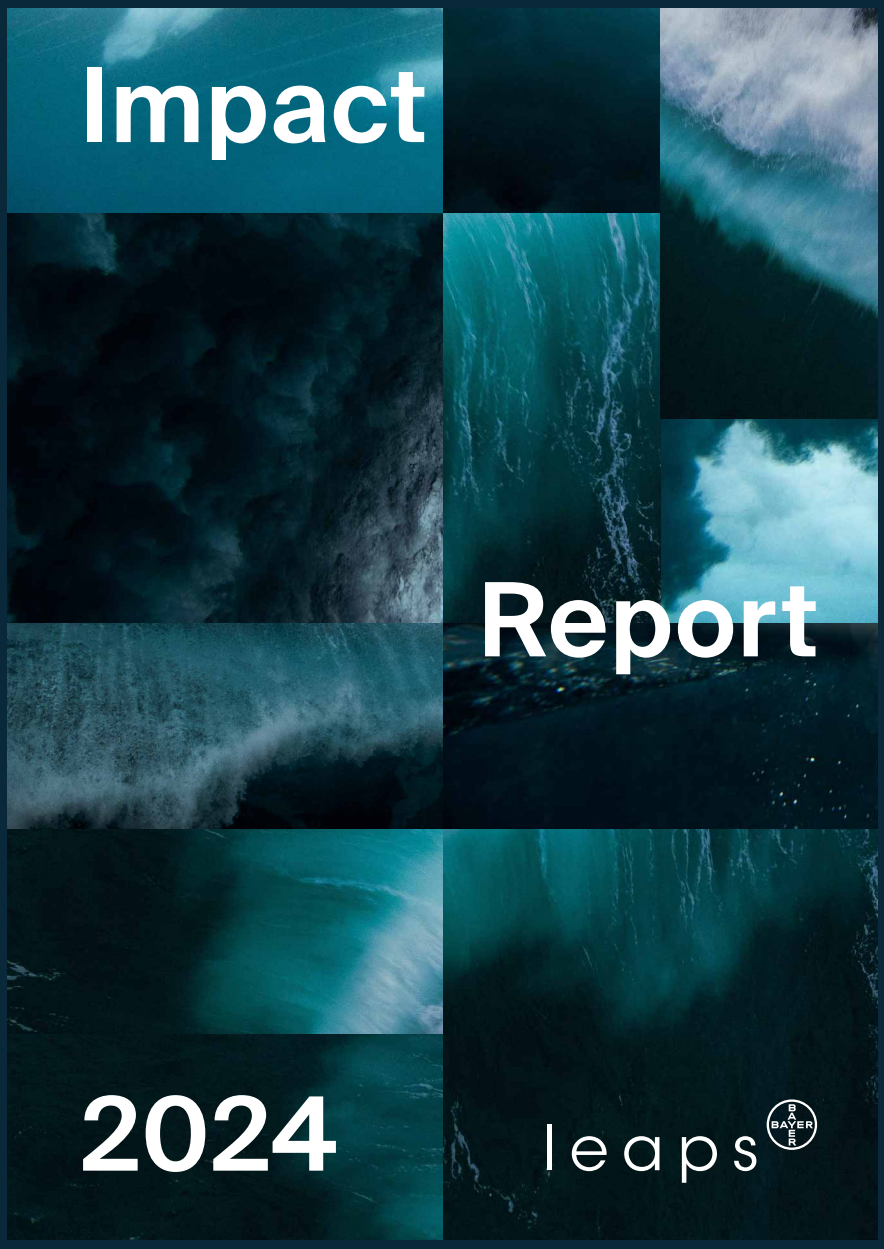
Our impact report includes an introduction to our impact metric Wellbeing Adjusted Lifeyears (WALY) and shows aggregated impact outcomes based on the 24 companies that participated in our last impact evaluation round. We also managed to ensure the permission of 3 Leaps portfolio companies (ReCode, Oerth Bio, and Apollo) to feature them as case study examples in our report, providing the reader with a more in depth understanding of how the impact calculation for such technologies is derived.

Happiness Research Institute

Together with the Happiness Research Institute, we have found an underlying unit - wellbeing - that allows us to assess the potential magnitude an innovation/technology can have on humanity, if it becomes successful.

The Impact Report 2024 derives from a multi-year partnership that we have built with the Happiness Research Institute, an independent research organization focusing on collecting worldwide data around the wellbeing and life satisfaction of individuals.

READ THE FULL IMPACT REPORT 2024



The Breakthrough Study
Preview

How Society Feels about Breakthrough Science: Gauging global attitudes towards transformative innovation in health and nutrition

The Challenge

Breakthrough technologies may fail to make an impact if they face public resistance. From GMOs to vaccines, insight-driven engagement must begin early.

The Ambition

Build an understanding of how the public feels about breakthrough science, with a focus on four topics, chosen based on their significant potential to impact their respective industries, their relevance, and their projected timeline for market entry:

AI in health and medicine

Cell therapies and gene therapies

Cultivated meat

New genomic techniques for agriculture

The Goal

Leverage insights into people's hopes, fears, and priorities around breakthrough technologies to deliver actionable insights that can facilitate societal alignment.

The Approach

A digital study that collected insights from over 13,000 participants in 13 countries (n=1000/country), covering five continents.

USA
Mexico
Brazil
Germany
France
Italy
Nigeria
South Africa
India
China
Singapore
Australia
Japan

A short preview of questions asked:

1. How likely or unlikely are you to try cultivated meat if it were to become available near you?

2. Are you optimistic or pessimistic about the potential of cell and gene therapy to cure diseases such as Parkinson's Disease and other degenerative diseases?

3. How informed if at all, would you say you feel about crops developed with new genomic techniques (NGTs such as genome editing tools like CRISPR)?

4. Would you personally use an AI-powered health tool if it had been approved for use by national health authorities?

Collaborators include:

leaps by BAYER — Underwriter

BCG — Analysis and publishing

Ipsos — Market research

Carbon Offsetting the Annual Review

Climate change is leading to global challenges.

As an impact investor, we are committed to challenging our own thinking and our marketing practices in terms of its environmental impact. In line with these efforts, we wanted to create a climate compensated Annual Review that meets our standards of quality but simultaneously impacts the environment as little as possible.

Our approach to a climate compensated Annual Review

How did we achieve this?

By continuous project management tracking that allowed us to calculate the CO_2 emissions generated throughout the content creation process.

How did we offset our carbon emissions?

Through buying carbon credits from our Leaps portfolio company Andes. Andes offers public services that allow companies to neutralize their emissions with a carbon price of 212 USD per tonne.

Andes engineers microorganisms to permanently remove CO_2 from the atmosphere. Their beneficial microorganisms are added to the soil along with agricultural seeds, such as corn and wheat. These microorganisms grow with plant roots and accelerate the conversion of CO_2 into minerals. With rainfall, the minerals move deep into the soil, making room for annual CO_2 removal.

What else did we do?

A main contributor to the climate emissions of creating such an Annual Review lies in the printing of the document.
This hard copy is a climate neutral report, printed on 100% recycled paper in Germany. We ensured that all 200 printed editions have been compensated through buying carbon credits from the Leaps portfolio company Andes.

Neutralizing emissions through carbon credits from Andes

andes

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Team & Offices

Global Offices

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Team Members

01
Paimun Amini
Senior Director of Venture Investments Agriculture

02
Natasa Bazdarevic
Administrative Support Brand & Community Engagement

03
Juergen Eckhardt
Head of Leaps by Bayer

04
Rakhshita Dhar
Senior Director of Venture Investments Health

05
André Guillaume
VP / Head of Brand & Community Engagement

06
Doerte Fiebiger
Brand & Community Engagement Support

07
Ruzha Draganova
HR Business Partner

08
Lucio Iannone
VP of Venture Investments Health

09
Karyn Riegel
Deputy Director of Brand & Community Engagement

10
Billie Othman
Executive Assistant

11
Ingo Klöckner
Head of Portfolio Strategy & Reporting

12
Denise Boehme
Director of Portfolio Strategy & Reporting

13
Sara Olson
Director of Venture Investments Agriculture

14
Neele Piekarz
Brand & Community Engagement Associate

15
Fabio Pucci
Senior Director of Venture Investments Health

16
Nicki Saee
Digital & Event Marketing Manager

17
Derek Norman
VP of Venture Investments Agriculture

18
Pamela Sisson
Senior Director of Legal Affairs

19
Pei Sze Ng
Director of Venture Investments

20
Alev Oezmen
Portfolio Strategy & Reporting Support

21
Kira Peikoff
Deputy Director Communications


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We are impact makers and innovators.

We are pioneers and trailblazers.

Manifesto

We believe in what we can prove.
In facts and figures. In evidence.

But at the same time we are fascinated by the things we can't yet prove.

The small things – and the big questions that move humankind.

Our achievements are the result of our insatiable curiosity and our stubbornness about never giving up.

We love the problem, but adore the solution.

We are analytical and creative.
We are critical and passionate.
We scrutinize and practice.

We are architects of possibilities where others only see limitations.

We are logicians finding riddles worthwhile enough to spend a lifetime pondering.

We are advocates for nothing less than changing the world for the better.

Not because we're asked to do it, but because we have to.

Leaps by Bayer is the impact investment unit of Bayer. Leaps invests in paradigm-shifting advances in the life sciences and in technologies with the potential to change the world for the better. To date, Leaps by Bayer has invested over $2 billion of minority equity into over 65 portfolio companies.

With portfolio companies in health and agriculture, Leaps is seeking to achieve ten ambitious goals – the 10 Leaps for humanity.
The primary goal is to push the advancement of breakthrough technology through the creation of business models that balance profitability with sustainability.

Health

Moving from prevention to cure

Agriculture

Moving from more to better

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Represented by the
Management Board:

Bill Anderson, Chairman
Wolfgang Nickl, Stefan Oelrich,
Heike Prinz, Rodrigo Santos,
Julio Triana

Kaiser-Wilhelm-Allee 1
51373 Leverkusen
Germany

T +49 (0)214 30-1
info@leaps.bayer.com
www.leaps.bayer.com

Entry in the Commercial Register of the Cologne District Court (Amtsgericht): HRB 48248

VAT ID No.: DE 123659859

Head of Leaps by Bayer
Juergen Eckhardt

General Contact
André Guillaume

Design and Production
Circle Culture Consulting

Social Media
leapsbybayer

WE TAKE A LEAP FORWARD TOGETHER, SO IMPOSSIBLE TODAY BECOMES POSSIBLE TOMORROW.

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