Resource: List of Biotechnology Companies to Watch

By Logan Thrasher Collins

I created this list of organizations (107 total to date) to serve as a resource to help people learn about and keep track of key biotechnology companies. Some of these are emerging startups, some are established giants, and some provide useful services. Some notable nonprofit organizations are included as well. Though this list is far from comprehensive, I have tried to cover as many of the key players as possible. It is also important to realize that this landscape is constantly changing, so some of the information on this list will eventually transition into antiquity. The list was originally started over the course of 2021, updated during the summer of 2022, and updated again during the summer of 2024. I hope you enjoy delving into the exciting world of biotechnology!

Ablynx
Nanobodies as therapeutics and as laboratory reagents.

Aera Therapeutics
Developing protein nanoparticle delivery vehicles (originally the "selective endogenous encapsidation for cellular delivery" or SEND platform) for gene therapy which are based on proteins from endogenous virus-like particles encoded by the human genome.
Also developing proprietary gene editing proteins of compact size to overcome packaging limits.
Co-founded by Feng Zhang.
Raised $193M in a February 2023 funding round.

AgeX Therapeutics
Treating aging using stem cell therapies, induced tissue regeneration, related methods.

Allonnia
Engineering microorganisms and enzymes to degrade environmental pollutants.
Funded by the Ferment Consortium of Ginkgo Bioworks.

Alora
Engineering salt-tolerant rice via CRISPR for ocean agriculture to feed the world.
Formerly known as Agrisea.
Early stage: raised a $1.4M seed round as of September 2022.

Altos Labs
Developing cellular rejuvenation technologies to reverse age-related diseases and aging.
Has raised over $3B from funders such as Jeff Bezos, Yuri Milner, and others (the most funding of any biotechnology company as of June 2024).
Steve Horvath is one of the principal investigators working at Altos Labs.
Main scientific advisor is Nobel Laureate Shinya Yamanaka.

Arena Bioworks
Not a company but a biomedical research institute that employs principal investigators to lead basic research into the mechanisms of human disease, to develop therapies, and then to create spinoff companies that can translate those therapies to the clinic.
Emphasizes translation by providing its investigators with the support and infrastructure to do so.
Relies solely on private funding, thus its investigators do not need to apply for grants and can focus on the research.
CRISPR pioneer Keith Joung is one of the first principal investigators at Arena.
Co-founder and CEO is Stuart Schreiber, who also co-founded the Broad Institute.
Launched with $500M in private funding.
Located in Cambridge near MIT and Harvard.

Asimov
Developing computer aided design tools for synthetic biology, making host cell lines for viral vector and biologics manufacturing, constructing genetic parts database.
One of the co-founders is Christopher Voigt.
James Collins is on the scientific advisory board.

Beam Therapeutics

Developing base editor technologies towards therapeutic applications.
David Liu and Feng Zhang are among the co-founders.

Bioasis

Has developed a peptide called xB^3 that facilitates transcytosis across the blood-brain barrier.
Working towards applications in glioblastomas, brain metastases, and neurodegenerative diseases.

Biogen

Large pharmaceutical company focusing on developing treatments for neurological diseases.
Has made moves towards developing gene therapy pipelines for treating neurological diseases, though the company has experienced some setbacks in this space (i.e. failed clinical trials).

BioMarin Pharmaceutical

Enzyme replacement therapies for rare diseases.
During April 2021, announced a collaboration with the Allen Institute to develop AAV gene therapies for rare diseases of the brain.

Bionaut Labs

Microrobotics as a new paradigm for drug delivery.

BioViva

Developing gene therapies to treat aging, offers tests for determining biological age.
Elizabeth Parrish (the company's CEO) tested an experimental gene therapy on herself and reports positive results, though she did not intend for this information to go public.
George Church and Aubrey de Grey are on the scientific advisory board.
Anders Sandberg is the company's ethics advisor.

BioViva

Calico Life Sciences
A subsidiary of Alphabet Inc. (Google) which focuses on studying and treating aging.
Partnered with Abbvie to develop drugs for age-related diseases.
Has also established partnerships with the Broad Institute of MIT and Harvard and with the Buck Institute for Research on Aging, has published numerous peer-reviewed papers on the biology of aging.

Calico

Caribou Biosciences
Developing allogenic CAR-T and CAR-NK therapies using a Cas12a chRDNA (CRISPR hybrid RNA-DNA) genome-editing technology which enables multiplex gene edits, higher specificity, and less off-target editing.
As of June 2023, has two CAR-T therapies for hematologic diseases in phase I clinical trials as well as a portfolio of other therapies at earlier stages of development.
Jennifer Doudna is a co-founder and is on the scientific advisory board.
As of June 2023, has raised $167.7M in funding.

CARIBOU BIOSCIENCES®

Capsida Biotherapeutics
Developing targeted AAV gene therapies for a variety of brain diseases.
Has made blood-brain barrier crossing AAVs that are liver untargeted and brain targeted.
Founded by Viviana Gradinaru.

CAPSIDA BIOTHERAPEUTICS

Capsigen
Engineering superior AAV gene therapy vectors through a proprietary method called Transcription-Dependent Directed Evolution (TRADE™).
Have developed greatly improved neurotrophic AAVs.
Entered into a partnership with Biogen during May of 2021 to develop AAV gene therapies that treat various brain and neuromuscular disorders.

Capsigen

Capsitec

Has developed DNA origami shells to multivalently capture viruses and trigger their clearance by the immune system.
Co-founded by Hendrik Dietz.
As of June 2023, also planning to develop new gene therapy vectors based on DNA origami as well as a biomanufacturing platform for producing large quantities of ssDNA.

CATALOG

Building a DNA-based platform for massive digital data storage and computation.

Celero Systems

Developing ingestible pills which can diagnose, monitor, and treat diseases by sending data to external devices (e.g. cell phones).
Their HEALTH-Dx™ pill can monitor respiratory and cardiac rhythms to diagnose sleep apnea.
Their RESCUE-Rx™ pill can automatically administer rescue medication in the case of an opioid overdose.
Robert Langer is an advisor and one of the co-founders.

Code Biotherapeutics

Has developed 3DNA, a multivalent DNA nanostructure (not DNA origami) which both carries therapeutic transgenes and can be linked to antibodies or peptides to facilitate cell-targeted delivery of said transgenes.
Focusing on Duchenne Muscular Dystrophy while also in very early stages of exploring lung, pancreas, and liver diseases.
Has raised $85M as of June 2023.

Cognigenics

Developing inhalable AAVs to deliver CRISPR gene therapy for treating anxiety, depression, and mental impairment.
Has demonstrated successes in mouse models for treating anxiety as of June 2023.
Plans to start clinical trials in 2024 and claims that they may bring the product to market as early as 2025.

Leveraging contract research organizations (CROs) and contract manufacturing organizations (CMOs) to accelerate their research and development.
First raised initial funding in 2020 for early preclinical work from early angel investors and then received $950K during 2022 from Fifth Set Ventures and Lionheart Ventures for further preclinical studies and beyond.

Cognigenics™

Colossal
Centered on moonshot projects that are using advanced CRISPR methods to bring back the Wooly Mammoth, the Thylacine (Tazmanian Tiger), and other extinct animals.
Aims to reintroduce lost biodiversity and thus repair ecosystems.
Will develop biomedical technologies such as artificial wombs in conjunction with its de-extinction research, providing additional benefits to humanity and acting as a way to bring in funding.
Cofounded by George Church, Ben Lamm, and Andrew Busey.

colossal

Convergent Research
Not a company but a nonprofit organization which incubates, finds philanthropic donors for, and supports Focused Research Organizations (FROs).
For more information on FROs, see this open access article in Nature.
Adam Marblestone is CEO and a co-founder.

CONVERGENT RESEARCH

Cortical Labs
Developing hybrid bioelectronic devices which incorporate cultured biological neurons to perform computational tasks. These devices are power efficient, scalable, robust to physical damage, and have the potential for fluid adaptation to many different computational problems.

CORTICAL LABS

Cradle
Aiming to develop reversible whole-body cryopreservation for humans.

They have so far shown that electrophysiological activity can be restored in a cryopreserved and rewarmed slice of rat cerebellar tissue.
Has raised $48M as of June 2024.
Laura Deming and Hunter Davis are the co-founders.

Cradle

Creative Biolabs
Custom services for antibody engineering, membrane protein production and characterization, bioconjugation, gene therapy development, viral vector engineering, cell therapy development, molecular dynamics simulations, drug development consulting, and more.

Creative Biolabs

Cultivarium
Developing molecular techniques, hardware platforms, and software tools to accelerate adoption of non-model microorganisms for biotechnology.
Cultivarium is a focused research organization (FRO), so it possesses a distinct funding approach and different goals compared to traditional startups. For more information, see this open access article describing FROs in Nature.

CULTIVARIUM

DoriVac
Developing DNA origami cancer vaccines which facilitate cross presentation of antigens and are also applicable to infectious diseases.
Raised $100K by winning the 2022 Alnylam BioVenture Challenge.
Early stage as of June 2023.
Their technology was developed by William Shih and Yang Zeng at the Wyss Institute.

DoriVac

Dyno Therapeutics
Using deep learning to improve properties of AAV capsids as a platform technology for gene therapy.
George Church is one of the co-founders.

DYNO THERAPEUTICS

E11 Bio
Building moonshot technologies involving superior molecular barcoding, spatial -omics, and viral circuit tracing to help neuroscientists map the brain. Has a long-term goal of mapping brains at the one-hundred billion neuron scale.
E11 Bio is a focused research organization (FRO), so it possesses a distinct funding approach and different goals compared to traditional startups. For more information, see this open access article describing FROs in Nature.

Editas Medicine
CRISPR-based gene therapy.
George Church, David Liu, Jennifer Doudna, Feng Zhang, and J. Keith Joung are the co-founders.

Eikon Therapeutics
Superior drug discovery platform which leverages high-throughput automated super-resolution microscopy for tracking single protein movements in living cells.
Eric Betzig is one of the advisors.

Emerald Cloud Lab
Remote automated laboratory as a service for researchers.
Has a large array of automated equipment for synthetic biology and genetic engineering, physical and biophysical chemistry, structural biology, biochemistry, analytical chemistry, etc.
Provides a software interface for users to instruct the automated equipment.

Entos
Developing lipid nanoparticles with transmembrane fusogenic proteins to facilitate delivery of DNA, RNA, and CRISPR cargos.
Neutral lipid formulation (not ionizable) gives lower toxicity while the fusogenic proteins facilitate delivery efficacy.

As of June 2024, Entos is involved in oncology therapeutics, antivirals, gene editing therapies, immunotherapies, DNA vaccines, and senolytics.
Has partnered with Oisin Biotechnologies (see later in this list) to develop a new senolytic therapy.

entos

Evox Therapeutics
Developing exosomes loaded with AAV as a delivery system for gene therapy, shielding AAVs from immune factors and targeting them to specific tissues.
Also exploring other exosome cargos such as RNAs, CRISPR-Cas proteins, and therapeutic proteins.
Preclinical stage as of June 2023.

evox

Forest Neurotech
Developing a minimally invasive ultrasonic brain-computer interface implant that can access any part of the brain to understand and treat a wide range of neurological disorders.
Will employ both ultrasonic neuroimaging and neuromodulation using Ultrasound-on-Chip technology from their partner Butterfly Network.
Sumner Norman is CEO and a co-founder.
Launched in 2023 with $14M in philanthropic funding from Convergent Research, has since raised additional funding.
Has signed $20M contract to pay Butterfly Network for facilitating partnership and licensing of the Ultrasound-on-Chip technology.
Forest Neurotech is a focused research organization (FRO), so it possesses a distinct funding approach and different goals compared to traditional startups. For more information, see this open access article describing FROs in Nature.

Forest Neurotech

Form Bio
Developing AI-powered computational services for characterization and prediction of the properties of engineered AAVs (e.g. simulation and analysis of bioreactor setups for AAV production, prediction of mRNA expression, immunotoxicity prediction, generative *in silico* AAV candidate optimization) as well as for analyzing data from AAV production.
Spun off by another startup company (see earlier in this list) called Colossal.
Some of its advisors include George Church, Christopher Mason, and Peter Diamandis.

FORM BIO™

Frontier Bio

Has developed tissue engineered systems including Blood Vessel Mimics (already in use for medical device testing, a neurovascular-unit-on-a-chip for studying the blood-brain-barrier in health and disease, and vascularized organoids for aiding drug development and disease modeling.
Has raised $1.1M from investors and an SBIR grant as of July 2023.

FRONTIER BIO

Future House

Not a company but a research nonprofit organization funded through philanthropist Eric Schmidt, also seeking other funding.
They plan to spend $20M ramping up during 2024.
Has a 10-year mission to create “AI scientists”, semiautonomous AI systems that may dramatically accelerate the pace of biological research through not only laboratory automation, but also through cognitive automation of literature research, protocol writing, generating hypotheses, discerning patterns in data, etc.
Founder and CEO is Sam Rodriques, a former principal investigator at the Crick Institute.

FutureHouse

GATTAquant

DNA origami imaging probes, fluorescence microscopy reagents.
First commercial application of DNA origami.

GATTAquant
DNA NANOTECHNOLOGIES

Generate Biomedicines

Generative artificial intelligence to create novel *de novo* protein therapeutics with desired protein-protein interactions, enhanced enzymatic activities, and invisibility to the immune system.
Frances Arnold is on the board of directors.
Has raised $420M as of July 2023.

Generate:Biomedicines

Generation Bio

Developing gene therapies for rare and prevalent genetic diseases using close-ended DNA and cell-targeted lipid nanoparticle platform using a scalable enzymatic synthesis strategy to produce the DNA in large quantities.
Preclinical stage as of June 2023.
Has raised over $536M as of June 2023.
Established a strategic partnership with Moderna in March 2023.

generation bio

Gensaic
Developing M13 phage-derived particles displaying targeting molecules as a novel gene therapy vector, utilizing a high-throughput directed evolution platform to improve these phage-derived particles.
Redosable since M13 phages are a part of the human virome.
Tissue targets for their phage-derived particles include liver, lung, and central nervous system.
As of June 2023, has raised $3.5M (grant from Cystic Fibrosis Foundation).

GenScript
Services in artificial DNA synthesis, synthetic biology, antibodies, cell therapies, enzyme engineering, etc.

Ginkgo Bioworks
Synthetic biology, biomanufacturing, microorganism design, enzyme engineering, etc.
Acquired Gen9 in 2017.

HelixNano
Developing an mRNA-based SARS-CoV-2 vaccine which might protect from all possible variants of the virus.
Pivoted from original plan of developing cancer vaccines using the same technology.
Co-founded by Hannu Rajaniemi, who is also a successful science fiction author.
George Church is an advisor.

Humble Bee Bio
Identified a species of solitary bee which produces bioplastic to protect their nests and has leveraged the genetic blueprint from this bee to develop an environmentally friendly alternative to traditional plastics.

Immunai

Combining multi-omic single cell profiling technologies and machine learning to comprehensively map the immune system and thereby enable greatly improved immunotherapies as well as accelerate clinical trials and avoid costly failures.

Impossible Foods

Uses synthetic biology and biochemical engineering to develop plant-based substitutes for meat products.
Their signature product is the Impossible Burger. They also make a product which mimics sausages.
One notable strategy employed by Impossible Foods is production of leghemoglobin in yeast. This compound gives a meaty flavor when added to their food products. They also add other plant-based compounds to mimic the fats found in animal meat.

Insilico Medicine

Leveraging artificial intelligence to facilitate every step of pharmaceutical development.
Has developed software to discover and prioritize novel drug targets, generate novel molecules, and design and predict clinical trials.
Alex Zhavoronkov is CEO, Executive Director, and Chairman of the Board.
One of the company's lead pharmaceuticals (TNIK) represents the first AI-designed drug to reach phase II clinical trials.
Has raised over $400M in funding as of June 2024.

Intellia Therapeutics

Developing therapies which employ CRISPR gene editing technology.
Has conducted some successful clinical trials using CRISPR gene therapy to treat transthyretin amyloidosis (as of February 2022, this is not yet FDA approved though).
Also working on CRISPR therapeutics for engineering T cells towards targeting acute myeloid leukemia.
Partnered with Regeneron, Novartis, and others.
Jennifer Doudna was one of the co-founders.

Intellia THERAPEUTICS

Kernel
Neurotechnology, noninvasive brain-computer interfaces, invasive neural prostheses.
Some noninvasive products anticipated to be released during 2021.
Founded by Bryan Johnson who personally invested $54M.
Raised an additional $53M from outside investors.
Early goal is to help treat brain disease, has ambitions to enable human enhancement.

kernel

Landmark Bio
Provides services for clients in cell and gene therapy development including therapeutic discovery research, process development, analytical development, quality control, GMP manufacturing, and consulting.
Emerged from a public-private partnership founded by MIT, Harvard, FUJIFILM Diosynth Biotechnologies, Cytiva, and Alexandria Real Estate Equities.
Their mission is to accelerate biomanufacturing of cell and gene therapies as well as to serve as a forum for biomanufacturing workforce development in Massachusetts and beyond.

LANDMARK BIO™

Laronde
Developing therapies which utilize circular RNAs (Laronde calls these “endless RNAs”) as expression vehicles for proteins. Such circular RNAs are much more stable and less immunogenic than linear RNAs.

laronde

Ligandal
Peptide nanoparticles for targeted CRISPR-Cas gene therapy delivery, immunotherapy, hematological gene therapy, aging treatments.
Founded by Andre Watson.

LIGANDAL

Living Carbon
Developing genetically modified plants (including trees) with enhanced growth, carbon capture efficiency, and bioremediation properties.

Has raised over $36M and has planted over 170,000 genetically modified trees as of August 2023.

Living Carbon

LyGenesis

Allogenic cell therapy that uses host lymph nodes as bioreactors to grow ectopic replacement organs.

Has developed a method for generating ectopic livers via patient lymph nodes that is in early clinical trials as of September 2022.

Mammoth Biosciences

CRISPR-based diagnostics.

Jennifer Doudna is one of the co-founders.

ManifoldBio

System for barcoding protein therapeutics to enable high-throughput design and testing in complex environments, machine learning to optimize drug design.

George Church is one of the co-founders.

Moderna

Biomedical technologies which utilize mRNA inside of lipid nanoparticles; application areas include drug discovery, drug development, and vaccines.

Major player in COVID-19 pandemic since it was one of the first companies which developed and distributed SARS-CoV-2 vaccines to the world.

Motif Neurotech
Developing a small device implanted in skull bone which can perform transcranial magnetic stimulation (TMS) to treat depression and other mental health disorders, users wear a baseball cap with coils to activate the device.
Unlike traditional TMS, this device does not require numerous visits to a clinic with access to bulky equipment, vastly improving accessibility.
Has raised $100K as of June 2023.
Jacob Robinson from Rice University is co-founder.

Nanite Bio
Employing a high-throughput AI platform to predict properties of polymers and to design nanomaterials which serve as efficacious gene delivery vehicles, synthesizes and tests *in vitro* thousands of distinct polymer nanoparticles over a few days, uses multiplexed *in vivo* screening to test many polymer nanoparticles at once in animal models.
Has raised $8M in funding as of June 2023.

Nautilus Biotechnology
Developing a high-throughput single-molecule proteomics platform which integrates many novel techniques to decipher protein networks and thereby help accelerate basic science, new therapeutics, and new diagnostics.

Neurable
Developing a non-invasive brain-computer interface based on headphones that use electroencephalography to record brain signals, allowing people to control devices like phones with their minds.
As of September 2022, the company appears fairly far along in its product development process and is likely to release their headphones within a year or so.

Neuralink
High-bandwidth brain-machine interfaces, surgical robots which implant the interfaces in a manner resembling a sewing machine.
Early goal is to help treat brain disease, has ambitions to enable human enhancement.
Founded by Elon Musk and others, highly publicized by Elon Musk.

Has done testing on rats, pigs, monkeys, and other animals as of April 2021.

NewLimit
Extending human longevity through epigenetic reprogramming, starting with restoring youthful function in the liver and the immune system.
Has raised $40M as of May 2023.
Co-founded by Coinbase CEO Brian Armstrong.

Nvelop Therapeutics
Developing delivery vehicles for tissue-specific targeting and gene editing; based on lentivirus-like particles with fused gene editing proteins instead of DNA inside of the envelope (as seen in publications from David Liu's academic laboratory).
Co-founded by David Liu and Keith Joung.
Launched with $100M of funding as of April 2024.

Oisin Biotechnologies
Developing senolytics which target senescent cells by triggering apoptosis only when certain genes are expressed.
Has received investment from the SENS Research Foundation, the Methuselah Foundation, and the Methuselah Fund.

Openwater
Portable medical imaging technologies which employ novel optoelectronics, lasers, and holographic systems.
Wearable imaging technologies which could be 1,000x cheaper than MRI and achieve similar or better results.
Has speculated that their technology might eventually allow telepathic communication.

Orchid Health
Performs whole-genome sequencing on embryos to screen for neurodevelopmental disorders, birth defects, and chromosomal abnormalities as well as for genetic predispositions to cancers and ailments of the brain, heart, and more.
Helps patients ensure that their children have a healthy future and gives them the option to not move forward with the pregnancy if the embryo may lead to an unhealthy person.

Organovo
3D tissue bioprinting for *in vivo* clinical applications, *in vitro* tissue models for disease modeling and toxicology.
Long-term goal is to print entire human organs for transplants.

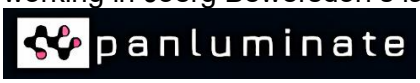
Oxford Nanopore Technologies
Portable nanopore sequencing devices, high-throughput desktop nanopore sequencing devices, sample preparation kits.
The company states that they have the first and only nanopore DNA and RNA sequencing platform as of May 2021.

Oxitec
Genetically modified male insects which curb the reproduction of populations of their species in the wild, acting as a precise and environmentally friendly way of controlling dangerous pests that spread disease or destroy crops.
After years of battles with activists and regulatory bodies, the company will release 750 million genetically modified mosquitos in the Florida Keys (the first time this has been done in the U.S.) with the goal of reducing rates of illnesses such as yellow fever and dengue.

Panacea Longevity
Enhancing longevity and health using a fasting-mimetic metabolite supplementation.
Early stage as of May 2021.

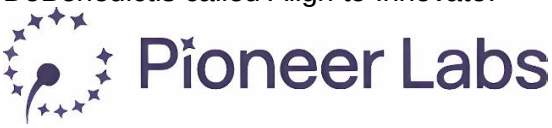
Panluminate

Offers expansion microscopy (ExM) as a service as well as related tissue labeling (e.g. Unclearing, chromatin labels for ExM, etc.) and imaging services, can expand tissues up to 25x using their pan-ExM technology.
CEO Ons M'Saad developed pan-ExM and some of Panluminate's related technologies while working in Joerg Bewersdorf's laboratory at Yale.



Pioneer Labs

Not a startup company but a nonprofit research organization with a startup-like approach.
Developing engineered microorganisms that may be able to grow on Mars with the future goal of terraforming, combining various types of extremophiles that individually have some of the abilities necessary for survival on Mars.
Shorter term goal of green manufacturing in resource-constrained environments.
CEO is Erika DeBenedictis, formerly a principal investigator at the Crick Institute.
Funded by the Astera Institute as well as supported by another nonprofit founded by Erika DeBenedictis called Align to Innovate.



Prime Medicine

Developing CRISPR Prime editing technology as a novel therapeutic modality.
David Liu and Andrew Anzalone are co-founders.

Proteinea

Mass-produced insect larvae as an affordable way of manufacturing recombinant proteins.
Early stage as of May 2021.

ReCode Therapeutics

Has developed selective organ targeting (SORT) lipid nanoparticles, which include the four components of traditional lipid nanoparticles plus a fifth biochemically distinct lipid to facilitate bypassing of the liver and targeting of other organs such as lung and spleen.

As of July 2023, has reached early-stage clinical trials for treating primary ciliary dyskinesia with inhalable SORT lipid nanoparticles that carry mRNA, is just starting early-stage clinical trials for treating cystic fibrosis with inhalable SORT lipid nanoparticles that carry mRNA, and has begun discovery-stage work on several other treatments.
Has raised a total of $422M as of July 2023.
Co-founded by Daniel Siegwart, a professor at the University of Texas.

ReCode THERAPEUTICS

Recursion Pharmaceuticals
High-throughput platform for drug discovery which leverages AI and multimodal automated screening tools to achieve a cycle of homing in on useful drug molecules, narrowing the search space recursively.
Has found some molecules which are now in clinical trials as of June 2023.

RECURSION

Repair Biotechnologies
Developing a cholesterol degrading platform therapy which can reverse atherosclerosis.
The CEO, who is known as Reason, is outspoken about the need to combat aging.
Has preclinical proof-of-concept as of May 2021.

REPAIR BIOTECHNOLOGIES

Resilience
New manufacturing platforms to service partners for development and scaling of gene therapies, cell therapies, vaccines, protein therapies, and more.
Received $800M in funding during 2020.

RESILIENCE

Retro Biosciences
Longevity company with the goal of adding 10 years to the healthy human lifespan.
Developing treatments for aging in the areas of hematopoietic stem cell reprogramming, autophagy enhancement, microglia therapeutics, tissue reprogramming, and T cell reprogramming.
Sam Altman invested $180M into Retro Biosciences in 2023.

Ring Therapeutics

Developing anellovirus as a minimally toxic and redosable alternative to existing gene therapy viral vectors.
Anellovirus is a commensal human virus.
Employing a platform called Anelloscope for screening of anellovirus sequences from human tissue, this then leads into to design of improved anellovirus variants.

Science

Developing a device-therapy combination to restore sight in people who have lost photoreceptors but retain retinal ganglion cells.
Leveraging optogenetic gene therapy to give retinal ganglion cells the ability to respond to light as well as an implantable device that fits over the retina and stimulates the modified retinal ganglion cells with appropriate wavelengths to reproduce vision.
Also has an in-house foundry which can provide custom electronics fabrication as a service to interested parties.

Sherlock Biosciences

CRISPR-based diagnostics.
Feng Zhang is one of the co-founders.

Somalogic

Proteomics platform called SomaScan for protein biomarker discovery which aids researchers in the development of new diagnostics.
SomaScan is an aptamer-based platform which can simultaneously measure 7,000 protein biomarkers.
Founded by Larry Gold, who is the inventor of SELEX.

somalogic

SpyBiotech
Developing a vaccine against human cytomegalovirus using virus-like particles equipped with their SpyTag-SpyCatcher molecular glue technology.
As of June 2024, is in the process of a phase I clinical trial for their vaccine against human cytomegalovirus.
Has licensed the SpyTag-SpyCatcher technology to a variety of research groups working on vaccines for cancer, chronic diseases, viral diseases, bacterial diseases, parasite diseases, and veterinary diseases.
Mark Howarth, who originally developed the SpyTag-SpyCatcher technology in his academic lab, is a co-founder.

spybiotech

Strateos
Offers R&D services through remotely controlled automated laboratories.
Has extensive automated equipment for research in drug discovery, synthetic biology, imaging, cell and gene therapy, etc.

Synchron
Endovascular brain-computer interfaces as a minimally invasive approach for neural prosthetics, neuromodulation, and neurodiagnostics.
Has developed the strentrode, an endovascular electrode array that can record or stimulate neurons from within blood vessels.
As of September 2022, a technology called brain.io (that employs stentrodes) is in early clinical trials and gives paralyzed patients the ability to control digital devices.

synchron

Synthego
CRISPR genome engineering services, custom cell lines, custom screening libraries, CRISPR reagents and kits, aiding both academic researchers and clinical drug developers.

SYNTHEGO

Systemic Bio
Develops vascularized organ models in hydrogels as tools for accelerating and improving preclinical drug testing.

Syzygy Plasmonics

Developing a photocatalytic reactor system which leverages a nanoparticle-based plasmonic photocatalyst. The photocatalyst consists of a larger light-harvesting plasmonic nanoparticle decorated with smaller catalytic nanoparticles. Their first product will be a clean hydrogen fuel production system which does not rely on petroleum.

More of a chemical engineering company than a biotechnology company, but their technology may eventually have applications in biology.

Tilibit Nanosystems

Service which gives researchers predesigned and custom DNA origami nanostructures, including ones with chemical modifications.

Founded by Hendrik Dietz, who was CEO from 2012-2014. He is now a scientific advisor.

Turbine AI

Predictive computational models of cancer cells, the "Simulated Cell™" platform, performing *in silico* experiments to test millions of drugs.

Has partnered with Bayer, AstraZeneca, and others for drug development efforts.

Twist Bioscience

Artificial DNA synthesis services. Synthetic biology towards insulin manufacturing in yeast, scalable spider silk manufacturing, combating malaria, and DNA data storage.

Emily Leproust is a co-founder.

Vault Pharma

Protein vault nanocompartments as a drug delivery platform to treat cancers and other diseases, protein vaults as a vaccine platform.
Co-founded by Leonard Rome.

VectorBuilder
Services in vector cloning, virus packaging, library construction, cell lines, etc.

Verve Therapeutics
Developing CRISPR base editing therapies to turn off key genes (e.g. PCSK9 and ANGPTL3) involved in atherosclerotic plaque formation and thus to combat cardiovascular disease.
The delivery mechanism involves lipid nanoparticles carrying gRNA and mRNA encoding a base editor protein.
Has potential to save tens of millions of lives due to the status of heart disease as one of the most common causes of death.
Early clinical trials began in July 2022.

Virica Biotech
Helps in biomanufacturing of viral vectors through utilizing Viral Sensitizers, a library of small molecules which inhibit cellular antiviral defenses and thus increase yields of viruses from producer cells by around 5-10x.
Provides custom services in aiding client biomanufacturing process development by incorporating Viral Sensitizers.
Has raised $1.1M as of July 2023.

Xaira Therapeutics
Leveraging machine learning data generation to develop a drug discovery platform and therapeutic products.
Has received $1B of funding as of April 2024, though was recently announced and is still ramping up.
David Baker is a co-founder.

Led by Marc Tessier-Lavigne, former CSO of Genentech.
Staff includes the scientists who developed RFdiffusion and RFantibody in David Baker's lab.

xaira

Zymergen
Synthetic biology, metabolic engineering, biomanufacturing of materials and compounds as a substitute for chemical engineering practices.

zymergen

4D Molecular Therapeutics
Using high-throughput screening and recombination methods to develop novel AAV serotypes that evade immune responses and that target and transduce specific organs.
Clinical trials for several new AAV vectors that treat pulmonary, cardiac, and eye diseases are ongoing as of September 2022

4DMT

10x Genomics
Spatial transcriptomics, genomics, proteomics, immune cell profiling, etc.
Acquired ReadCoor and Cartana in 2020.

10x GENOMICS

64x Bio
High-throughput screening and computational design of new mammalian cell lines for manufacturing gene and cell therapies.
George Church and Pamela Silver are among the co-founders.

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