## **Oxford BioEscalator** Portfolio 2025



## Driving clinical impact: the groundbreaking companies at the Oxford BioEscalator



bioescalator.ox.ac.uk

## BioEscalator Portfolio 2025

Alongside other founding members of MiroBio, we chose to establish our operations in the BioEscalator and I have first-hand experience of the excellent support, sense of community and constructive ecosystem it fosters. Our time at the BioEscalator gave us strong foundations and set our company up for success; we all have happy memories of our time together there.

This spirit of support and facilitation is what the BioEscalator is all about and the 2025 Portfolio is another example of that service. By bringing together for the first time its current cohort of bioscience companies in this Portfolio, the incubator highlights how they are leveraging cutting-edge science to improve human health in a significant way.

Working from a compact place in Oxford, the BioEscalator companies' promise is reaching investors and other funders across the world. An impressive range of organisations in Oxford, Cambridge, London, Geneva, California, New York, Canada and Malaysia is supporting this next generation of entrepreneurs and innovators.

I welcome the BioEscalator Portfolio 2025 as a great resource for potential investors and partners and wish the tenant companies every success.

**Tim Funnell DPhil** Partner, Monograph Capital



## Introduction from BioEscalator Business Manager

Bringing our current tenants together in this Portfolio 2025 shows not just the vast range of diseases that they are seeking to impact but also the world-leading science they are bringing to bear against medical challenges.

With driven management teams advised by experts in their fields, the BioEscalator is very proud to be home for this stellar collection of companies. Although our tenants may be young, their reach is extensive and sophisticated as evidenced by the partner and investor map which shows partners and funders across Europe, the US and Asia.

The list of investors and partners for individual companies makes for impressive reading. We hope you find this Portfolio 2025 an enjoyable guide to the activities of BioEscalator tenants – you can make contact with them via the details given in their profiles or us if you would like to know more.

**Dr Claire Shingler** Business Manager, BioEscalator 

## Alethiomics

Category: Biotech, Oncology

From single cells to novel targets - we uncover new biology to discover and develop life changing treatments for patients with blood cancer

#### **Reason to believe:**

Alethiomics has combined technologies for single cell multi-omics, 3D organoids and machine learning informatics into a target discovery platform, Artemis.

The platform enables the identification of new, precision cancer cell-specific targets and then functionally validates them in an advanced disease relevant human tissue environment. This has generated novel approaches for the development of therapies for myeloproliferative neoplasms (MPNs) which promise to be more effective than current therapies, which have limited effect on disease-driving stem cells and fail to affect the progression of the disease.

#### **Origin story:**

University of Oxford spin-out Alethiomics was founded on a decade of worldleading research by academic clinicians and haematologists Professors Adam Mead and Bethan Psaila.

Oxford Science Enterprises provided £6m of seed capital to use the company's multi-omic insights into MPNs to identify and validate targets using the Artemis platform and develop novel molecules as potential therapeutics.

#### **Development stage:**



#### Achievements so far:

- Spun out of University of Oxford with £6m seed funding (Oxford Science Enterprises)
- Identification of antibody drug conjugates against targets from Artemis platform
- Team expansion to 8 people

- Nomination of candidate drug in MPN indication
- Series A financing
- First-in-human trial



Granza Bio

## Granza Bio

Advancing Therapeutic Delivery with Precision Shells

**Category:** Biotech, Oncology, Autoimmune Disorders & Infectious Diseases

#### **Reason to believe:**

With its Precision Shell Platform, Granza Bio is engineering self-assembling proteins used by immune cells for cell-to-cell communication to create a novel class of delivery vehicles. These precision shells can be further functionalised with cell-specific receptors to enhance targeted delivery.

The platform supports a wide range of cargo types including nucleic acids, proteins, and genetic modifiers, while overcoming immunological activation typically triggered by delivery vehicles and enabling tropism to diverse tissues, including hard-to-reach organs.

#### **Origin story:**

Granza Bio utilizes the discovery of "attack particles", proteinaceous structures that represent a fundamental mechanism by which cytotoxic immune cells induce cell killing. These autonomous entities, identified in the laboratory of co-founder Professor Michael Dustin at the University of Oxford, are a powerful component of the immune system's arsenal.

Leveraging this insight, Granza Bio has engineered these naturally occurring glycoproteins into a novel delivery technology designed to transform the treatment of cancers, autoimmune diseases, and infection.

#### **Development stage:**

| Preclinical  |                               |  | Clinical                  |   |
|--|-------------------------------|--|---------------------------|---|
| Research   | In vitro                      | In vivo  | Phase I                   | Phase II                                      |
| <ul> <li>Angels</li> <li>Felicis</li> <li>Metaplanet</li> <li>North South V</li> <li>Oxford Angel</li> <li>Oxford Science<br/>Enterprises</li> <li>Pioneer Fund</li> <li>Refactor Capital</li> <li>Ritual Capital</li> <li>University of C</li> <li>Y Combinator</li> <li>Zeno Ventures</li> </ul> | Ventures<br>Fund<br>te<br>tal | People<br>Dr Ashr<br>Nandal<br>Co-found<br>Profess<br>Michae<br>Co-found | win<br>kumar<br>der & CEO | Dr Ashwin<br>Jainarayanan<br>Co-founder & CSO |

#### Achievements so far:

- Participation in Y Combinator programme
- Oversubscribed \$7m seed round
- Demonstrating successful loading of diverse therapeutic cargo into Precision Shells

- Demonstration of Tissue-Specific
   Tropism in Non-Human Primates
- Selection of Lead Drug Candidate
- Completion of IND-Enabling Studies





## Icosphere Biosciences

Developing high capacity adenoviral vectors for improved large gene delivery

Category: Biotech, Gene Therapy

#### **Reason to believe:**

The Icosphere Biosciences team has a proven track record in building and exiting biotech companies, including the Native Antigen Company (£18M, 2020) and Oxford Genetics (\$135M, 2021).

With hundreds of peer-reviewed publications and over 100 global patents, their deep expertise has already secured seed investment and Innovate UK funding for the company. Their scientific background enabled early validation of Icosphere's core technology, significantly de-risking the company and positioning it for long-term success.

#### **Origin story:**

Founded in 2024 by Oxford virologists, including Professor Leonard Seymour and Dr Ryan Cawood (co-founders of Oxford Genetics/OXGENE).

Delivering large DNA molecules to treat diseases like Duchenne Muscular Dystrophy remains a major challenge, Icosphere Biosciences is tackling this problem.

By re-engineering adenoviral vectors, we aim to transform gene therapy enhancing both manufacturing and delivery to unlock new possibilities in genetic medicine.

#### **Development stage:**



#### Achievements so far:

- Raised seed investment via Mercia Ventures in October 2024
- Awarded an Innovate UK Biomedical Catalyst grant of £232K which started in April 2025
- Validated core scientific technology within the first
   12 months and building out a strong IP position.

- Scale out the manufacturing process for our flagship adenoviral technology
- Raise additional capital to continue our growth journey
- Finalise our key disease targets and validate the platform for each condition in 2025





INFINITOPES Precision Immunomics™

## Infinitopes

**Category:** Biotech, Oncology

#### **Reason to believe:**

Infinitopes is pioneering a new era in cancer treatment with its Precision Immunomics<sup>™</sup> platform. Their off-the-shelf vaccine strategy, powered by world-leading immunopeptidomics, AI/ML-driven antigen discovery, clinically validated vectors, and smart patient stratification, aims to unlock the full potential of cancer vaccines.

**To Cure Cancer: Right Targets**, **Right Vectors**,

**Right Patients**,

**Right Time** 

Infinitopes will launch its first Phase I/IIa clinical trial in 2025 at unprecedented speed. accelerated by the MHRA's ILAP innovation passport. Ahead of this the company has expanded internationally, strengthening its leadership with globally recognised experts including David Curiel and Alexey Neszvizhskii (SAB), and seasoned biotech executives Dan Menichella and Jo Brewer PhD adding strategic insight to the Board of Directors.

#### **Origin story:**

Infinitopes is a Cancer Research UK (CRUK)-led spinout from Oxford University, combining underlying technologies, know-how, patents and licenses developed with CRUK funding across five separate university departments.

In less than three years, what began with three academic founders has rapidly expanded into a 28-strong team of specialists in immunology, vaccinology, oncology, biomanufacturing, clinical development, and regulation. Backed by CRUK, the world's largest cancer-research funder we are translating cutting-edge immunological insight into life-saving therapies that set a new standard for oncology care. The result is a precision-at-scale vaccine approach that promises faster access, lower cost, and focused tumour eradication with fewer side effects.

#### **Development stage:**

| Preclinical |          |         | Clinical |          |
|-------------|----------|---------|----------|----------|
| Research    | In vitro | In vivo | Phase I  | Phase II |
|             |          |         |          |          |

#### **Investors & partners:**

- Cancer Research Horizons
- Cancer Research Institute
- **CRIS** Cancer Foundation
- CRUK
- **Kindred** Capital
- Manta Ray Martlet Capital
- Meltwind Advisorv
- **Octopus Ventures**
- Saras Capital
- University of Oxford
- Wilbe Capital

#### Achievements so far:

- 2022 Innovative Licensing and Access Pathway (ILAP) innovation passport UK MHRA
- 2023 £12.8m seed round closed (three times oversubscribed)
- 2025 Granted Phase I/IIa UK Clinical Trial Application approval for precision vaccine ITOP1 targeting early-stage oesophageal cancer

#### **Future milestones:**

Start of Phase I/IIa UK VISTA clinical trial of ITOP1 in oesophageal cancer Discovery of optimal target maps for • first 5 indications



**People:** 

Dr Lian Ni Lee



infinitopes



😵 **ISO**genix

Developing precision medicines by harnessing the power of protein isoforms

## ISOgenix

**Category:** Biotech, Neuromuscular and neurological diseases

dicines by essing the r of protein oforms

#### **Development stage:**



#### Reason to believe:

Using a proprietary approach, ISOgenix is identifying and developing precision therapies to harness the therapeutic potential of protein isoforms, with an initial focus on neuromuscular and neurological diseases.

#### **Origin story:**

ISOgenix is an Oxford University spinout based on the research of Professor Matthew Wood, Professor Carlo Rinaldi and Dr Catheryn Lim.

The team is combining both academic and industry experience to develop precision medicines for the treatment of serious diseases with significant unmet need.

#### Achievements so far:

- Initial investment from Oxford Science Enterprises
- In-vivo optimisation studies initiated and platform capabilities established
- IP strategy defined & patents granted; operations and collaborations in place

- Select lead candidate for formal preclinical development
- Expand platform capabilities and validate emergent targets
- Expand team, external advisor network and collaborations



🝨 orfonyxbio

#### **Developing** a new class of genetic medicines for protein upregulation

## **Orfonyx Bio**

Category: Biotech, Therapeutic area to be Determined

#### **Reason to believe:**

Orfonyx Bio is harnessing its unique insights in translational regulation, oligonucleotide drug development, and its proprietary computational platform to develop an emerging class of genetic medicines that target RNA regulatory elements.

By exploiting their APEX (Activation of Protein Expression) platform, they can specifically target repressive sequence motifs to enhance protein expression of disease-relevant genes. The company's approach has great potential in a range of therapeutic areas as their platform can be applied to target more than half of the translated transcriptome.

#### **Origin story:**

Working in the laboratory of co-founder and serial entrepreneur Professor Matthew Wood, fellow founders Dr Nenad Syrzikapa and Associate Professor Thomas Roberts realised that the APEX antisense oligonucleotide platform had clinical potential. Forming a company was the next step, backed by Oxford Science Enterprises.

Nenad and Thomas have deep experience of the oligonucleotide space. Combined with the massive increase in understanding of genetic regulatory elements and the variety of mechanisms with which it is possible to intervene, the time was right for company formation. It has attracted leaders and scientific advisors with a record of oligonucleotide drug development.

#### **Development stage:**



#### Achievements so far:

- Spun out of University of Oxford with seed funding
- (Oxford Science Enterprises)
- Validated platform on multiple genes; optimising drug candidates for two high-impact disease targets
- Team expansion to 8+ people

- Completion of next financing round
- Advance R&D towards nomination of first drug candidate
- Relocation and further expansion of the Orfonyx Bio team



OSΦT

## OSPT

Category: Medtech, antibacterial

**Reason to believe:** 

OSPT is working to ensure that bacteriophages become the new, safer standard for the prevention of surgical site infections. By incorporating bacteriophages into biomaterials including silk, the company is developing resilient and versatile materials to produce medical devices actively preventing bacterial infections. This controlled addition of bacteriophages creates bioactive textile devices with complex phage patterns within their entire depth.

Bioactive Textiles Integrating bacteriophages -

**Preventing Surgical** 

Implant & Wound Infections before

treatment is

Required

The technology is anticipated to provide more targeted, safer and longer lasting bactericidal activity against the most problematic and resistant bacteria, minimising the risks of infection and reducing antibiotic use. Infections are ubiquitous in healthcare settings and OSPT's novel biomaterial has huge application potential.

#### **Origin story:**

The idea behind antibacterial company OSPT came to CEO and Co-founder Stephanie Lesage as she talked to haemodialysis patients, when it became clear that they had a really deep fear of the development of infection via their intravenous catheters.

Armed with extensive biomaterials expertise and knowledge of bacteriophages (viruses which attack bacteria), Stephanie launched OSPT in 2020. By incorporating bacteriophages into biomaterials including silk, the company is developing resilient and versatile materials to produce medical devices preventing bacterial infections. OSPT was initially financed by Stephanie and others, plus grant funding from local enterprise partnership OxLEP.

#### **Development stage:**



#### Achievements so far:

- £2.9m grant funding awarded from INCATEurope, Innovate UK & NIHR
- Demonstrated superior in-vitro efficacy of early prototype compared to competitor on the market
- Demonstrated feasibility of implantable devices invitro & reached international stage of first patent

#### **Future milestones:**

- Clinical trial for first external device
- Completion of development work for first implantable device

Partnering



OXcan Oxford Cancer Analytics

## Oxford Cancer Analytics (OXcan)

Category: Medtech, Oncology

#### **Reason to believe:**

OXcan's team invented a liquid biopsy blood test developed via cutting-edge proteomics and machine learning that can detect lung cancer signatures early, when it can still be cured. Its protein-based blood test provides a molecular signature for patients at high-risk and the global biobank allows for more reliable biomarker identification across populations. OXcan's test can be integrated with existing clinical pathways for accelerated deployment and collaboration with 10+ centres of excellence across 3 continents. The test can be conducted in an affordable, minimally invasive, and routine manner in large populations, characteristics that are not possible for conventional cancer detection approaches.

Enabling Curative Cancer Treatment

**Through Early** 

Detection

#### Origin story:

11

Drs Andreas Halner and Peter Liu met while studying at Oxford, determined to solve the problem of poor patient outcomes for the deadliest cancers due to late-stage diagnosis. They were joined by Dr Daniel Szulc from Toronto. Combining Andreas's machine learning and medical background with Peter's clinical medicine, oncology innovation and scientific background and Daniel's biomedical engineering, chemistry and entrepreneurship experience, OXcan started its mission.

OXcan also includes experience from a Nobel winning group, the WHO and guidelinesetting agencies. Senior leadership team includes SVP of R&D and liquid biopsy veteran Dr Heinrich Roder and Chairman Brad Wilson, former President Europe of GSK.

#### **Development stage:**

Completing development and preparing for launch

#### Investors & partners:

- Angels
- Aurelium Ventures
- Civilization Ventures
- Cross-Border Impact
- VenturesDigitalDx Ventures
- Eka Ventures
- LifeArc
- Macmillan Cancer Support
- MegaRobo Technologies
- OKG Capital
- Oxford Technology Management
- We Venture Capital

#### Achievements so far:

- Additional seed financing round of \$3.7m
- \$11m Series A funding from global investors, including in-field institutional investors in disease detection & diagnostics
- Raised \$16.5+million to date

#### **Future milestones:**

 Launch in the US - OXcan has established a laboratory in Colorado and is poised to launch a laboratory developed blood test integrated with current screening programs for lung cancer detection



# People: Image: Dr. Peter Jianrui Liu CEO Image: Dr. Peter Jianrui Liu CEO Image: Dr. Peter Disconnection of the period of the perio

<text>

**Category:** Biotech, Autoimmunity and Inflammation

#### **Reason to believe:**

A study in CD19 CAR T cell therapy which showed long-term drug-free remission in autoimmune disease supports the cell depletion hypothesis, although routine use of this approach is not feasible.

Instead, in hidradenitis suppurativa (HS), a poorly treated disease with market potential >\$3.6bn, the company has discovered a novel target expressed on T cells. Initial in vivo proof-of-concept data suggests that antibodies to the target have potential in the depletion of disease-causing immune cells and could be curative. Expansion into areas such as psoriasis and Crohn's disease could create a \$25bn market. Re-AIM is building a team of drug discovery and development experts to drive its growth.

#### Origin story:

Current therapies for autoimmune and inflammatory diseases treat the symptoms and not the cause of the disease. Having worked in this therapeutic area for over 20 years, Re-AIM founder and CSO Asher Maroof is convinced that precision-targeted immune cell depletion is the way to achieve long-lasting disease remission or cure.

RE-AIM has been established to discover and develop therapeutics that can selectively deplete disease-causing cells across a range of immunological disorders, from Type17/23 diseases such as psoriasis and hidradenitis suppurativa (HS) to relapsing-remitting conditions such as multiple sclerosis. Type 17/23 diseases, leading with HS, are the company's initial focus.

#### **Development stage:**



#### Achievements so far:

Demonstrated in vitro & in vivo proof-of-concept for lead asset

- Candidate selection, expand team and lab
- Initiate antibody discovery for broader pipeline
- Complete IND-enabling studies & move into Phase I





Development stage:



#### **Reason to believe:**

By leveraging advanced virological insights and innovative platform technologies, Sandbox Bioscience aims to redefine the standard for gene delivery, making gene therapies more precise, accessible, and safer for a broad range of clinical applications.

The team has over 40 years of experience in the gene therapy vector field.

#### **Origin story:**

Sandbox Bioscience Ltd was founded by a team of virology experts from the Oxford ecosystem, with decades of technical and commercial experience in gene therapy delivery systems and platform development.

The company is committed to identifying and engineering proprietary next-generation viral delivery vectors that offer enhanced safety, scalability, and target specificity compared to existing market solutions. The company's business model will include licensing agreements, collaborative partnerships and contract research.

#### Achievements so far:

• Successful building of phase one materials required for in vitro testing and feasibility studies.

- Optimise viral production plasmids
- Proof of concept efficacy of viral platform
- Strategic partnerships with research institutions



SiGenex

S

Revolutionising Genetic Testing

## SiGenex

**Category:** Medtech, Genetic testing eg for antimicrobial resistance, Pharmacogenomics

#### **Reason to believe:**

SiGenex is led by a team of experienced professionals with deep expertise in genetics, artificial intelligence, medical device development, data science, and healthcare management. It has worked closely with clinicians to develop appropriate next-generation (NGS) workflows and has prototyped AI modules.

Integration of the AI modules and validation of the testing device is underway. Other advantages of the technology include federated learning which allows the AI models to learn from the decentralised network while keeping data locally secure, a proprietary data management protocol for communication with healthcare providers, and the ability to scale the decentralised network rapidly.

#### Origin story:

Frustrated by the standard slow and costly centralised approach to healthcare genetic testing, which delays clinical decision making and restricts access for many populations, SiGenex is developing a decentralised system to be used locally at the point of care (POC). The benchtop device incorporates sample preparation, next-generation sequencing (NGS) and Al/ML algorithms to interpret genetic variations and provide actionable insights.

SiGenex expects to reduce the standard >\$500 per NGS test by up to 80% and expects its customers to include clinics, assay developers and pharmaceutical companies. The company's founders include mathematician Dr Bohao Yao (University of Oxford), Tan Rasab (entrepreneur), Khizar Khan (GlobalFoundries) and Rushdy Ahmad (Wyss Diagnostics Accelerator).

#### **Development stage:**



#### Achievements so far:

- Completed proof-of-concept work
- Established presence in Oxford and Kuala Lumpur
- Signed MoU with Government of Malaysia

- Complete development & validation of technology with leading research institutes and pilot network
- Regulatory approval eg in the US and Europe
- Establish scalable device manufacturing





# **U**Ploid



## **U-Ploid**

Redefining fertility possibilities by improving egg quality, integrating seamlessly with current IVF protocols

#### Category: Biotech, Fertility

#### **Reason to believe:**

Millions of couples worldwide face infertility, and age related egg quality decline is a significant contributor. While current IVF protocols are advanced, treatment success rates drop sharply for women in their mid-30's to 40's.

The Company's lead program is a first-in-class drug candidate, with promising preclinical activity against age-related damage in egg cells. It is collaborating with fertility clinics globally to accelerate the development of the programme, which has shown promising preclinical activity in addressing age-related natural egg deterioration. U-Ploid is committed to improving access to better reproductive health outcomes and envisions a future where anyone who wants to start a family, can.

#### Origin story:

15

Co-founded by leading scientists and industry experts Drs Jordan Abdi (CEO), Chloe Charalambous (COO), and Alexandre Webster (CSO), U-Ploid Biotechnologies is dedicated to significantly improving the success rates of IVF leading to a healthy pregnancy.

Their approach involves the development of therapeutics designed to radically improve the quality of egg cells in older women and, in doing so, tackle agerelated infertility. U-Ploid is developing first-in-class reproductive health therapeutics to address the global unmet need of age-related fertility decline.

#### **Development stage:**

| Preclinical |          |         | Clinical |          |
|-------------|----------|---------|----------|----------|
| Research    | In vitro | In vivo | Phase I  | Phase II |
|             |          |         |          |          |

#### **Investors & partners:**

#### People:

- Wilbe
- Playfair VC
- Blue Collective Induction Bio
- Induction
- Cocoa VC
- Care Fertility
- San Diego Fertility Center
   University of Oxford
- We PhD



Dr Chloe Charalambous PhD, Co-Founder & Chief Operating Officer

Dr Alexandre Webster PhD, Co-Founder & Chief Scientific Officer

**Dr Jordan** 

Abdi

#### Achievements so far:

- Professor Alison Campbell and Dr Mary Vinson joined Advisory Board
- Research collaboration with Care Fertility announced
   Selected for Merck's Corporate Accelerator
- Selected for Merck's Corporate Accelerator Programme

- Develop de novo pathway with regulators for first-in-class therapeutic
- Establish clinical partnerships for first clinical trial
- Initiate first-in-human pregnancy study





## **Our Alumni**

The BioEscalator has served as a launchpad for numerous alumni companies, helping them grow and succeed to the point of expanding into larger facilities. We're very proud of their ongoing development, and our alumni remain important to our community.







CardiaTec Biosciences

EnaraBio

mirčbio

ochrebi



EXACT SCIENCES

m

SYNTENY

OMass

THEOLYTICS



MEDI MAB BIO

**Nucleome** 

**PepGen** 

Therapeutics

17 bioescalator.ox.ac.uk



## BioEscalator Community Achievements

The innovative companies in this Portfolio document are part of an ambitious community that the BioEscalator has been building since 2018. These statistics give a range of measures of our success and that of our tenants.





of Tenants are University of Oxford Spin-outs



Companies Nurtured



Events Reaching >4600 People



Female Founders/CEOs





Funds Raised



3 Acquisitions 1 IPO



Jobs Created

## Contact us to find out more about joining our innovation community or working with us.

BioEscalator Innovation Building Old Road Campus Roosevelt Drive Oxford OX3 7FZ United Kingdom

+44 (0)1865 618800 bioescalator@medsci.ox.ac.uk

bioescalator.ox.ac.uk

Follow us on LinkedIn in



The information in this document is for informational purposes only. The information is not financial or investment advice, and you should not consider it to be financial or investment advice.

