



OT(S)EIS Full Portfolio - Q4 2022

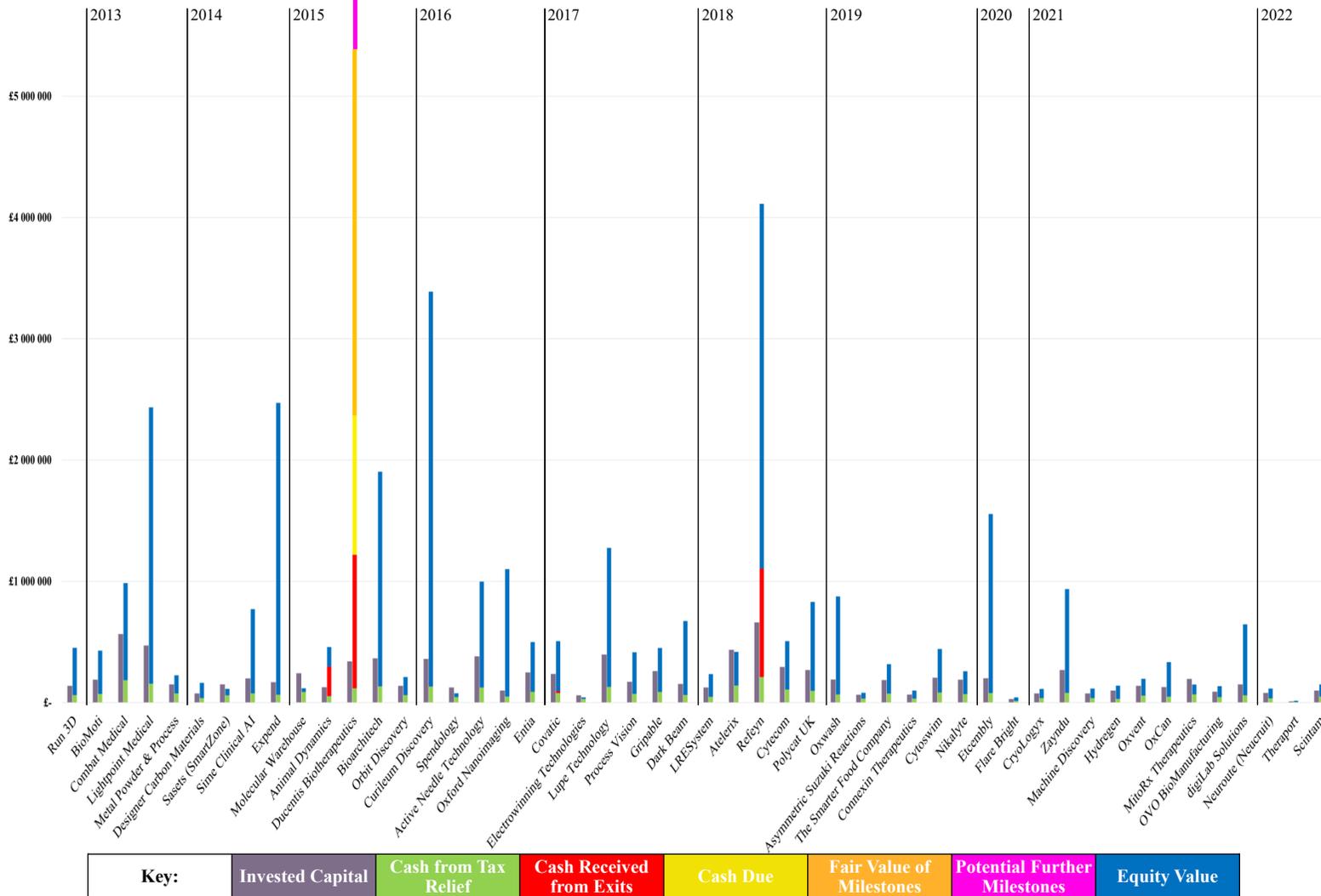
Investment Objective

- OT(S)EIS invests in life, physical, and data science start-ups based in and around Oxford and London, at the pre-seed and seed stage. Our investment horizon is patient and long-term.
- We are active investors, using our expertise to help portfolio companies develop scalable business models, robust pricing strategies, and effective R&D programmes.
- We use the SEIS and EIS tax relief schemes to de-risk investments whilst offering our investors significant (and tax-free) capital growth potential.

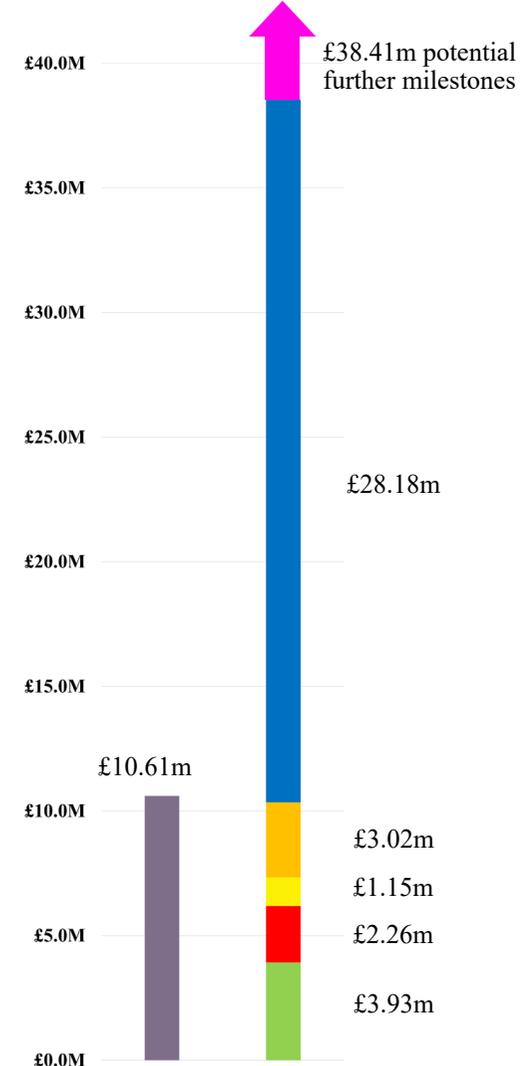
Managers	Lucius Cary and Andrea Mica
Fund Value	£38.53m*
Portfolio	50 Active Companies
Contact	otseis@oxfordtechnology.com

Portfolio Holding Valuations

£38.41m potential further milestones



Overall Fund Value



*Excluding potential further Ducentis milestones

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Oxford Technology Q4 2022 Portfolio Report

Summary

This report summarises the progress made by portfolio companies in the latest quarter. By the 31st December 2022, OT(S)EIS had completed 200 investments in 54 companies. It also details useful information about the fund, including how we invest, opportunities for co-investment at presentations, and the intricacies of SEIS/EIS tax reliefs.

The investment figures for the fund as a whole are as follows:

Invested Capital: £10.61m

Cash from Tax Reliefs: £3.93m

Cash from Exits: £2.26m

Cash due from Ducentis Exit: £1.15m

Remaining Equity Value: £28.18m

In addition, there is the potential for a total of £41.43m in milestones from the Ducentis exit. The Fair Value of these milestones we evaluate to be £3.05m.

Valuations are all made according to the most recent price paid by investors in the company. If, following an investment, things have gone wrong, then the valuation is reduced. But if things have gone well, the valuation is not increased unless there is another funding round. To this extent the valuations are conservative, but obviously nothing really counts until the gains are realised through exits.

The figures assume that the investor in question has claimed the full amount of tax relief available from the SEIS and EIS investments. The cash back from tax reliefs can take some time to arrive, but it comes in the end. Firstly, the investee company has to meet certain HMRC requirements (e.g. trade for 4 months). Then they inform HMRC, who must authorise the issuance of certificates which will enable investors to claim their tax relief.

Exits are typically expected on a 10 year timescale: investments in OT(S)EIS are illiquid and long term. Nevertheless, the return multiples when exits occur can be considerable. For instance, the recent Ducentis exit could have a return multiple of up to 127x.

New Investments

This quarter, OT(S)EIS made an £100,000 investment in **Scintam Engineering**. The company provides a tooling platform to redefine maintenance by increasing safety and efficiency.

Portfolio Progress and Highlights

Sime has successfully achieved its CE mark, and its device can now be sold for clinical use.

Curileum has continued to make excellent progress with its preclinical candidates. The trials on pigs of their molecule to intervene early in the development of bowel cancer returned exciting results. Their stem-cell therapy also allowed effectively healing of a fistula for the first time. The company raised more than £500k largely from existing shareholders in Q4.

The term sheet for the long-discussed offer of investment in **Covatic** is at a significantly lower share price than had been expected. However, the company expects to be above monthly cash flow breakeven from January.

Saudi Aramco has taken delivery of **Process Vision**'s first LineVu trial system. Discussions indicate a need for 60 systems in one particular site alone. The system has also been installed and is now operating at Storengy in France. It is believed they may require further 30 LineVu systems. The company approached its shareholders for additional capital and has so far received £660,000 at an increased share price of £5.

Atelerix's new product, CytoStor, has already started delivering sales. Its fundraising is going well.

In addition to the two offices in the US, one on each coast, **Refeyn** has also opened an office in Kobe, Japan.

The Smarter Food Company has started receiving excellent case studies. See page 40 or <https://smarternaturally.com/case-studies/>

Several of **Nikalyte**'s SERS customers have presented exciting results from their SERS substrates at international conferences. The order pipeline for SERS substrates as well as for systems continues to grow.

Staff at **Etcembly** have now increased from 2 to 14 and the Neo-Antigen personalised cancer vaccine trial is progressing well.

Flare Bright has completed an initial US Department of Defense contract and has moved immediately onto a follow-up contract (highly unusual for a small foreign company without the presence or employees in the US).

Zayndu installed three machines for 'paid-for' trials at vertical farms in the US (including the world's biggest one) and received an order for a fourth.

MitoRx's ongoing fundraising has had an excellent internal response (OTSEIS participated), and there has also been very good interest from external investors.

digiLab raised £900k and has signed deals worth in total over £500k. With 15 people now on the payroll, these are excellent results for a young company.

Our Funds

Oxford Technology manages two funds:

1. OT(S)EIS - The Start-up Fund: Investors' money is invested over 3 years - Approx. 1/3 (less fees) in SEIS investments in year 1, 1/3 in EIS investments in year 2 in those of the earlier SEIS investees which are doing well, and the same again in year 3. SEIS investments are very high risk and some failures are to be expected, although there have been very few so far which is why the track record is so good. So it takes 3-4 years before all the tax reliefs are obtained, which does not suit everybody.

2. OTEIS - The Development Fund: Investors have all their money invested within one year in EIS investments, mainly in earlier OT(S)EIS investments which are developing well. So this fund has a lower risk profile than OT(S)EIS and investors can claim their tax reliefs more quickly.

Information Memorandums and Application forms are available at www.oxfordtechnology.com/invest

OT(S)EIS Fees

Type	Details
Initial Fee	1%
Management Fee	2% (Years 1-3) 1.5% (Years 4-7) – deferred and to be paid only from proceeds of exits 0% (Year 8 and onwards)
Custodian Fee	0.15% + VAT annually (NB – reduced from 0.35% in 2017). There is also a receiving agent fee of up to £25 + VAT for each subscription, and a £15 fee will apply for any transfers of holdings. Distributions may also incur a small administrative charge. These fees will be paid from the investor's cash pool.
Performance Incentive	Once a typical investor, defined as a 40% taxpayer with no capital gains tax to shelter, has received a return of £1.20 (including tax benefits) for each £1.00 invested then 20% of all further payments to all investors who invested at the same time will be paid to OTM as a performance incentive.

SEIS and EIS Tax Reliefs - Overview

Please consult HMRC or your financial advisor for full details and conditions.

Type of Tax	SEIS	EIS
Income Tax	Reduced by 50% of investment Reduced further by up to 22.5% if the business fails Income tax relief can be applied to tax bill year prior to investment	Reduced by 30% of investment Reduced further by up to 31.5% if the business fails Income tax relief can be applied to tax bill year prior to investment
Capital Gains	50% relief against capital gains tax bill, which is not merely deferred but cancelled No capital gains tax to pay on exits	Deferral relief on capital gains tax bill arising 3 years before, or 1 year after investment No capital gains tax to pay on exits
Inheritance Tax	No inheritance tax (after 2 years)	No inheritance tax (after 2 years)

Example SEIS investment

An individual investor with income tax of £25,000 to pay, and capital gains of £100,000 in the 2020/2021 tax year on which tax of £20,000 at the 20% rate is due to be paid, invests £10,000 in an SEIS qualifying company in 2020/2021:

Initial Investment	£10,000
Income Tax Bill Relief (50%)	-£5,000
Capital Gains Tax Relief	-£1,000
<hr/>	
Net Cost of Investment	£4,000

If the above investor had had the same tax status in 2019/2020, they could also choose to treat their 2020/2021 investment as if having been made in 2019/2020, and claim relief for that year instead.

If the investee company fails, the remaining part of the investment on which income tax relief has not been claimed (£5,000 in this example), may be set against the investor's income tax liability. For a 45% taxpayer, for example, this relief is worth £2,250. If they also have capital gains tax to pay, then the total loss on the investment of £10,000 would be reduced to £2,750 if the investment was made in 2020/2021 and not carried back to the previous year - in other words, a downside of 27.5%. There is also the further possibility of capital gains tax loss offsets.

If the investments succeeds, and the shares are sold for, say, £20,000 (twice the purchase price), the £20,000 would be tax free, a multiple of more than 5 times the net cost, or an upside of 400%.

International Team

China Office - chenjie@oxfordtechnology.com

Oxford Technology has an office in Shanghai, China, run by Chenjie Ma, who read engineering at Oxford. She worked for us here in the UK before going to run the office in China. It is naturally a great help to our investee companies to have a Chinese speaker on their side if/when they are seeking to make their first sales in China.

California Office - bijan@oxfordtechnology.com

Oxford Technology also has an office in Menlo Park, just outside San Francisco in California, run by Bijan Kiani. Oxford Technology invested in his first start-up business, INCA, in the 1980s, which was ultimately acquired by a company in California. Bijan then helped to grow Synopsys from 300 to 13,000 people: it is now the No 1 player in Electronic Design Automation. In 2019, Bijan contacted OTM, saying that while he had loved building Synopsys, what he had enjoyed most was the early days of his first business, working with OTM to get it all going and getting the first sales contracts in the US etc. He offered to help our investees in the UK get going in the US. The CEOs of our investees who have worked with Bijan all say how helpful and useful he has been. Bijan recently become the CEO of Machine Discovery, in which he is also a shareholder.

Presentations

At 10am on the first Thursday of every month, Oxford Technology hosts a Zoom meeting at which existing investee companies who are raising additional capital can make presentations to investors. After the presentations and before questions, there is a live performance by pianist Anita D'Attellis. The next meetings are on:

Thursday 2 February Bach Goldberg Variations

Thursday 2 March Chopin Preludes

Thursday 30 March* Chopin Preludes

*The 'April' presentation falls on 30 March as it is the last Thursday in the tax year.

If you would like to attend and don't already receive the link, please email otseis@oxfordtechnology.com

Invest in OT(S)EIS

While it is very good to make direct investments into presenting companies, please do also consider making an additional investment into OT(S)EIS as well. The reasons are:

1. OT(S)EIS can get you access to significantly better valuations. Presenting companies are those in which we have already made SEIS/EIS investments, typically at lower share prices. For example, in Q1 2020 we made an SEIS investment into Etcembly at 40p per share (so 20p after SEIS tax relief). In Q4 2020, Etcembly gave a presentation and raised £1.6m of EIS investment at £1.58 per share (so £1.10 after EIS tax relief — more than 5x the after tax share price of the earlier SEIS investment). This could make an enormous difference to returns when it comes to exits, and SEIS offers better tax reliefs.
2. With OT(S)EIS, you make a single investment and we do all the work. We handpick about 5-6 SEIS investments from the ~1000 approaches we receive each year, diversifying risk, and then invest in a similar number of follow-on EIS investments. We send you all the forms necessary to claim your tax reliefs, a report with a valuation each quarter, and we actively help the investees.
3. Companies at presentations are almost always only EIS, whereas OT(S)EIS gets you SEIS exposure and hence better tax reliefs.
4. Unless we raise capital for OT(S)EIS, we're not able to make the initial SEIS investments in start-ups, so there won't be any companies to present down the line!

OT Growth Fund

We continue to believe that there is a good opportunity to create a larger fund, maybe £50m, which would invest in those of the earlier investments in the portfolio which are doing well. The concept is very simple. Since we invest in companies at the very earliest stage, we get to know the founders very well. And we know the things which the founders might prefer that we didn't know - problems with personnel and patents, for example. This puts us in a very good position to be able to judge which investee companies are worth backing with significantly larger investments of several £m. A particular aim would be to use Bijan (who helped build Synopsys in California from 300 to 13,000 people) to help these companies get started in the US. The valuations of technology companies are generally significantly higher in the US than in the UK, so this should benefit the initial UK investors.

Investors who might be interested in such a fund should contact us.



Run3D.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£1.49m	£0.45	26.1%

Run 3D Investment History

Date	Amount	Share Price	Type
Dec 2012	£100,000	£0.15	SEIS
Oct 2013	£15,000	£0.15	SEIS
Oct 2013	£10,000	£0.15	N/A
Nov 2017	£3,000	£0.30	EIS
Mar 2019	£10,206	£0.45	EIS

Description of Business

Run3D is the brainchild of Dr Jessica Leitch, who is an International runner herself (representing Wales) and who has a D.Phil from Oxford in the biomechanics of running. Runners have reflective balls attached to their various joints (hips, knees, ankles) and also at various other points on their legs and then run on a treadmill. Special cameras capture the image of the balls at 200 frames/sec. This data is then fed into a computer programme which then outputs a complete gait analysis, giving every detail of the gait, the angle of heel-strike, the rotation and rate of rotation of each joint etc. The analysis can be used to modify the gait for two purposes; to reduce the likelihood of injury and to increase speed.

Progress since Investment

Initial progress was quite good. The company opened its own Run3D centre in Oxford, and also opened five franchises. But it then became clear that improvements in the software were needed, so Run3D then spent the next two years, in collaboration with a company in Amsterdam and with the help of a grant, rewriting the software from scratch. The new software was used for the first time in summer 2016, and was a big step forward - easier to use and with many new features. In Q1 21, all the data (at last!) went into the cloud so that every time a Run3D gait was done anywhere in the world, the (anonymised) data went into the cloud, enabling Run3D to quickly compile databases of different types of runners, eg Elite Female Marathon Runners, Male runners over 60 etc. Also in Q1 21 Run3D's AI went live to interpret the results. One of the difficulties that Run3D has faced is that it produces a vast amount of data (the movement of every joint and element at 200 frames per second). While an experienced podiatrist can interpret this data, some younger physiotherapists have found it daunting. The new add-on software automatically interprets a gait report, and makes suggestions as to what the issues might be, making Run3D less complicated to use and more appealing to a wider market of less-experienced clinicians.

Date	UK & Ireland	US	Europe	Rest of World	Mobile	Total
Dec 2017	7		1			8
Dec 2018	8		1	2		11
Dec 2019	10	1	1	2	1	15
Dec 2020	13	0	4	2	1	20
Dec 2021	19	1	4	3	1	28
Dec 2022	27	1	2	3	1	34

Recent Developments

Run 3D continues to make good progress. The growth in the number of clinics continues to be UK focused. The company intends to make an effort to get more clinics abroad and will be attending a big exhibition in the US in Q1 23.



Biomoti.com

Company Valuation	Valuation Share Price	Fund Holding
£2.21m	£0.12	16.1%

Biomoti Investment History

Date	Amount	Share Price	Type
Jan 2013	£74,998	£0.05	SEIS
May 2014	£40,000	£0.05	EIS
Mar 2021	£74,661	£0.12	EIS

Description of Business

BioMoti is based on technology from Queen Mary University of London. Its founders are Dr. Davidson Ateh and Prof. Jo Martin who was appointed as Head of Pathology for the NHS in 2013.

Tumour cells including those from ovarian, breast, pancreatic, colon, prostate, and bladder cancer overexpress a particular ligand, CD95L on their surfaces. CD95L helps tumours to avoid the immune system by killing off certain classes of immune cells and is also associated with triggering cancer metastasis. The scientists have discovered that if a small particle is coated with CD95R (which binds to CD95L), the cancer cell will engulf the particle and draw it inside. By loading a chemotherapeutic drug into a biodegradable particle coated with the receptor molecule, it is possible to deliver high concentrations of chemotherapy drug into the cancer cells.

Preclinical tests have shown remarkably good results, with 65-fold reductions in tumour burden, doubling of median survival and significant decreases in toxicity seen in an ovarian cancer model when the technology is applied and compared with the current clinical standard-of-care.

Progress since Investment

BioMoti has carried out many successful preclinical experiments. They have experimented with different production techniques, in part due to the fact that the original technique they had used became unavailable. The experiments show that their technology, Oncojans, deliver on the promise of higher activity and lower toxicity than the standard of care delivery for paclitaxel. The Oncojan formulation enables the drug to give performance similar to cisplatin, a much more powerful drug which has limitations which the Oncojans would not have. Although only observed (as there was quite a lot of variation and relatively few samples) the Oncojans also seem to encourage the penetration of Cytotoxic T cells into the tumour environment.

The original manufacturing technique is now available again in two different versions and Biomoti has also tested new technologies which give very high loading of drug in the particles.

Recent Developments

BioMoti is still seeking to fundraise a round to take its assets to the clinic. They are getting a lot of supportive feedback and offers from smaller investors, but a lead investor is yet to be found. Nevertheless, BioMoti has had promising results in research which may open up a route into cell therapy. It is, however, still quite early.



CombatCancer.com

Company Valuation	Valuation Share Price	Fund Holding
£30.19m	£11.28	2.7%

Combat Investment History

Date	Amount	Share Price	Type
Apr 2013	£74,999	£4.31	SEIS
Dec 2013	£74,998	£4.74	EIS
Oct 2014	£10,002	£4.98	EIS
Dec 2014	£34,271	£4.98	
Mar 2016	£74,998	£14.10	EIS
Oct 2016	£64,995	£11.28	EIS
Mar 2017	£129,212	£14.10	EIS
Mar 2018	£27,058	£14.10	EIS
Mar 2021	£54,223	£11.28	EIS
Apr 2022	£21,218	£11.28	EIS

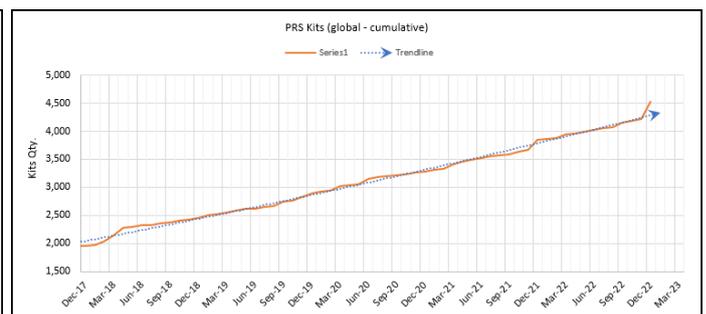
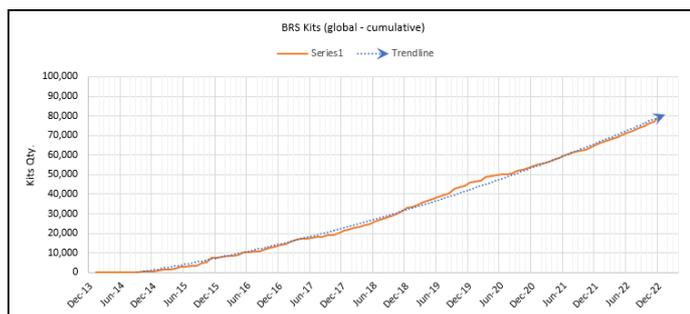
Description of Business

Combat Medical develops and manufactures devices for the treatment of bladder and peritoneal cancers. The bladder cancer device consists of a control unit and a disposable heat exchanger and catheter. These are used to deliver a treatment consisting of heating a chemotherapy liquid and circulating this through the bladder. The standard treatment for bladder cancer involves cutting out the tumours in the bladder and results in up to 78% recurrence of tumours which then require increasingly drastic surgery. Combat's treatment, called HIVEC (hyperthermic intra-vesical chemotherapy), reduces recurrence rates by up to 4 times. The peritoneal cancer device works according to a similar principle, with the addition of CO2 agitation.

Sales are growing well, and the core business is profitable. The devices are CE marked and in use with doctors. Thus far they have been used in combination with surgery, but they are also being investigated as standalone treatments. This would reduce costs for medical providers, as repeated surgeries are extremely expensive. Combat is now undertaking further clinical trials in order to make the treatment a standard of care. Success here should further accelerate sales of the device and dramatically increase the value of the company.

Recent Developments

Combat sales continued well. A record year, with overall sales up 14.9%, with a few downs holding back 50% growth in some markets. Clearly still a long way from where we hope to end up. There is, after all, still over 95% of the market to capture, but accelerating all the time.



A combined analysis of Combat Hivec I and HIVEC II trials show that longer duration of treatment increases the benefits by a further 20%.

Summary

Combat continues to grow its sales of hyperthermic bladder cancer treatment and peritoneal treatment. With 80,000 and 4,500 treatments, respectively, having been sold.



LightpointMedical.com

Company Valuation	Valuation Share Price	Fund Holding
£36.49m	£0.79	6.2%

Date	Amount	Share Price	Type
Jun 2013	£74,999	£0.047	SEIS
Mar 2014	£75,000	£0.19	EIS
Nov 2014	£9,991	£0.238	EIS
Dec 2014	£124,895	£0.238	EIS
Mar 2016	£100,000	£0.509	EIS
Mar 2016	£20,000	£0.509	EIS
Mar 2019	£26,941	£0.65	EIS
Mar 2020	£38,825	£0.65	EIS

Description of Business

In cancer surgery, a surgeon cannot see whether the entirety of a tumour has been removed. In prostate cancer surgery, for example, roughly one quarter of surgeries will leave some cancerous tissue behind after surgery. Lightpoint has developed an imaging technology based on existing imaging PET and SPECT radiopharmaceuticals, to provide surgeons with a real time image of the cancer. Lightpoint is very actively engaged with surgeons to ensure that the products are best suited to their needs.

Progress since Investment

Lightpoint launched its first product in Q1 2018. The company has since adapted as the market feedback has directed it towards in-vivo applications suitable for laparoscopic and robot-assisted surgery where the benefit of limiting the removal of healthy tissue is greatest; prostate cancer surgery in particular. The company has strengthened its medical advisory board with specialists from the prostate cancer field.

Lightpoint launched its second product, SENSEI®, a robotic laparoscopic probe for prostate cancer surgery, in Q1 2021. The probe has two applications: sentinel node detection and metastatic node detection. SENSEI® has regulatory clearance in the EU, US, UK and Australia. A third product is undergoing development: a surface probe that will determine whether cancer has spread beyond the primary tumour to the nerve bundle in prostate cancer surgery.

Recent Developments

There is little we can report. David Tuch has returned as CEO in conjunction with the trade sale conversations. We cannot disclose anything more at this stage.

METAL POWDER AND PROCESS

MetalPowderProcess.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£1.25m	£1.25	12.0%

MPP Investment History

Date	Amount	Share Price	Type
Aug 2013	£150,000	£1.25	SEIS

Description of Business

Metal Powder & Process (MPP) was established to produce high quality metal powders by gas atomisation for the aerospace, medical, and other industries. Metal is melted at the top of the atomiser, a machine the size of a small house, poured through a nozzle and blasted by jets of supersonic argon gas, and so turned into dust. The use of powdered metals has been growing steadily over the last 50 years. It is less expensive to produce certain components, e.g. gear wheels used in cars, by metal injection moulding powdered steel, than it is to start with solid steel and then cut each tooth on a machine. Metal injection moulding also produces parts which can be stronger and more accurate. Now demand is increasing even more quickly due to the rapid growth of 3D printing of metal parts.

Due to the incorporation of some novel technology, it is hoped that the atomiser (known as Bertha) operated by MPP will produce powder of higher purity than the powders produced by existing atomisers. This, in turn, should make the powder suitable for use in the aerospace industry. In the past, the aerospace industry has been reluctant to use powdered metal since the impurities which are present in powders produced by existing designs of atomisers are potential crack-initiation sites.

Progress since Investment

Work on completing and commissioning Bertha has been continuing since the investment. The first sales were achieved in Q1 2015 for trial quantities. In Q4 2016, and after a development programme lasting about a year aimed at producing powder of a novel alloy for diamond attachment for an overseas customer, MP&P received its first significant order. This order was worth >£1m, to be delivered at steadily increasing monthly quantities. This was a great achievement and an important milestone in the development of the company, but it brought new challenges. Unfortunately, in 2020, the customer sold the product line which used the MP&P powder and MP&P lost its largest customer. In Q2 2017, Bertha produced her first titanium powder. During Q1 2021 the new fluidised bed, owned by MP&P's sister company PSI, became operational. This will be used, initially experimentally, to coat particles used in battery anodes in electric vehicles in a way which, it is hoped, will result in longer life batteries, capable of a significantly increased number of charge/discharge cycles. If this works, the potential is large. The rig will also be used to heat treat post-production metal powders to make them more suitable for repairing military aircraft in remote locations. The other use for the rig will be to recondition waste powder from AM operations. Several of these developments are grant-funded and with several parties involved.

Recent Developments

MP&P has been supplying hundred Kg quantities of an alloy used for defence purposes. This alloy is difficult to produce for a variety of metallurgical reasons. But if all goes well, it is possible that a major order could be received. This would be transformational for MP&P.



DCM Investment History

Date	Amount	Share Price	Type
Apr 2014	£75,000	£0.75	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.9m	£1.25	13.9%

Description of Business

Professor Kyriakos Porfyraakis developed a method of producing small quantities of endohedral fullerenes, while working in the Materials Department of Oxford University. Carbon exists in many forms, including graphite and diamond. But carbon can also exist as fullerenes, hollow spheres of carbon atoms, the simplest of which is made up of 60 carbon atoms. Professor Porfyraakis developed a method of making fullerenes which contain an atom of another element inside. At the time of the investment, the elements chosen were Gadolinium, Yttrium and Nitrogen. It was believed that these novel materials will have potential uses as a better contrast agent for MRI scans, for improving the efficiency of photovoltaics, and for use in certain quantum computing applications. There had been considerable interest from researchers around the world. Production capacity at the time of investment was about 1 gram per month. This is a classic high risk, high potential reward investment.

Progress since Investment

Production of the materials and research continued in the lab. An important milestone was achieved in Q3 2014, when DCM received its first order, £22,000 for 0.2mg of a nitrogen-containing fullerene, with a purity of 1 in 1,000, so 200 micrograms of the N@C60. This is a price of more than £100m per gram, so we think this might be the most expensive material on the planet. The material is being used in a research project whose aim is to produce an extremely accurate atomic clock on a chip so that it could be used in a mobile phone. This would enable GPS to be much more accurate which would have many potential applications including controlling driverless cars. In Q1 2018, a contract was signed with LocatorX, a US company, which will be seeking to commercialise the atomic-clock-on-a-chip application. DCM agrees to supply LocatorX N@C60 exclusively for this application and they agree to buy only from DCM. DCM received 100,000 founder shares in LocatorX. In Q2 21, a small technical milestone was achieved in the atomic clock project in that the reference signal, which had been detected in the UK before, but which had not been detected by the US scientists engaged on the project was detected. In 2020, Professor Porfyraakis became Head of Research for the school of Engineering at the University of Greenwich. As the labs emerged from Covid, in Q4 21, orders for N@C60 were received from LocatorX, the University of Oxford and the University of Lancaster, all partners of the atomic clock project. In Q4 21, a team, including Professor Porfyraakis, was able to align N@C60 and N@C70 derivatives in a liquid crystal matrix with ordering parameter $O_{zz} = 0.61$. (Perfect alignment is 1, random is 0 and orthogonal anti-alignment -0.5) With the aligned samples, the company was able to achieve addressability of the available 4-electron spin levels in endohedral nitrogen by coherent manipulations. Furthermore, these functionalized molecules give rise to endohedral fullerene qubits: multi-level computational units which could be an alternative to the conventional 2-level qubits used in quantum computing. Qubits offer a larger state space for encoding information and thus can offer enhancement of quantum algorithm efficiency. The paper published by Kyriakos and his team in *Angewandte Chemie*, has now received 4 citations.

Recent Developments

The production rig has been running almost continuously to supply the N@C60 needed by the three academic centres in the world working on the atomic clock application. In the meanwhile DCM has submitted a joint application for grant funding with Oxford University to add DNA tags to N@C60, Sc@C82 and La@C82 which would enable these molecules to be aligned and assembled into 2D and maybe into 3D structures in which the quantum spins of the heavy elements could be aligned which, in turn, would mean that they might then be used for quantum computing operations. The total funding sought is c £3m.



Date	Amount	Share Price	Type
Jul 2014	£75,000	£0.12	SEIS
Jan 2016	£75,000	£0.28	EIS

Company Valuation	Valuation Share Price	Fund Holding
£0.7m	£0.06	7.6%

Description of Business

Sasets provides software for construction companies which enables them to replace paper forms with forms on mobile devices. The forms may have information such as the weather entered automatically. The net result is a jump in efficiency and a big time saving. The forms are transmitted instantly to the department where they are needed, a huge improvement on the old methods of sending forms in triplicate by post to departments which then had to re-enter the data. Time stamped, geotagged photographs may be added to the forms, a great advantage in many situations.

Progress since Investment

As so often, things went more slowly than hoped, and new issues emerged when the product began to be used in the field. But technical development continued, and the number of users started to increase. Users pay a monthly subscription to use the software. Sasets grew to a peak of 493 users. Then two bad things happened. First, Keir acquired A1, which had about 150 Sasets users. Despite the protests of the users who liked the Sasets platform a lot, the contract with Sasets was cancelled. Then Covid struck, many construction sites were closed, and some construction companies went out of business.

Date	Paying users
Dec 2015	102
Dec 2016	200
Dec 2017	310
Dec 2018	422
Dec 2019	493
Dec 2020	437
Dec 2021	409
Dec 2022	453

Recent Developments

The number of users has risen from the depths of the Covid low, but has not yet surpassed the old peak. There are currently 18 corporate customers, the smallest of which has 2 users and the largest 140. The platform works very well, and the users are very complimentary about Sasets. They report how useful they find it and how they could not operate without it. So the company is seeking to make videos with some customers, ideally using interviews with the operators on motorways doing repairs and with the management higher up, all of whom use Sasets all the time. The aim is to convey just how useful it is and how it increases efficiency.

The current videos made several years ago look very staged, with everyone wearing spotless high-viz jackets and with no disorder and mess of a real working site. But the operators are a bit reluctant to show a real scene. They are image-conscious too. So we hope to reach some compromise and to be able to communicate how valuable Sasets is in practice.



Date	Amount	Share Price	Type
Sep 2014	£75,000	£2.11	SEIS
Apr 2016	£100,000	£2.35	EIS
Nov 2018	£25,040	£5.00	EIS

Company Valuation	Valuation Share Price	Fund Holding
£13.55m	£8.36	5.1%

Description of Business

Sime Diagnostics makes use of mathematical techniques to extract information from spectrometric readings of medical samples. The first application is in determining whether premature babies (and possibly babies born by Caesarean) need an application of lung surfactant to protect their lungs. Respiratory Distress Syndrome (RDS), a breathing disorder caused by surfactant deficiency, affects 1 in 4 premature babies.

Babies with RDS require mechanical ventilation, oxygen therapy and longer hospitalisation - all at significant cost. RDS can be prevented with surfactant treatment at birth. Prophylactic surfactant treatment harms healthy babies so neonatologists have to wait for RDS symptoms to develop before starting treatment. Sime's new test should give results within 10 minutes of birth. Sime's technology was used successfully for the first time on a premature baby in China in Q4 2018.

Sime's work has now been published and shows the Lung Maturity test has a very high sensitivity of 91% (accurately identifies 91% of babies that have a deficiency) and a specificity of 79% (accurately identifies 79% of those who don't).

Progress since Investment

Using the data generated from SIME's Lung Maturity Test to predict RDS at birth, SIME's propriety AI was able to successfully predict another lung disease at birth, BPD (Bronchopulmonary Dysplasia, more commonly known as chronic lung disease), a life-threatening disease that can have serious complications and large economic costs.

In parallel SIME's unique data and positioning in the respiratory diagnostic space has enabled SIME to rapidly develop a respiratory test for adults in intensive care with Acute Respiratory Distress Syndrome (ARDS), including Covid-19 patients. Insufficient surfactant in the lungs is a major contributor to ARDS, and treatment requires high-cost invasive ventilation. Early scientific validation of the test achieved positive results and IP has been filed.

Recent Developments

The big recent news is that Sime has successfully achieved its CE mark, and they can now sell the device for clinical use. This has generated considerable interest. In addition, the device is currently being revalidated in Denmark, which will generate the data needed for an FDA Breakthrough application.

<https://www.prnewswire.co.uk/news-releases/sime-ai-device-that-predicts-acute-respiratory-disease-receives-ce-mark---changing-the-standard-of-care-for-millions-of-babies-worldwide-301675729.html>



Expend.com

Company Valuation	Valuation Share Price	Fund Holding
£20.95m	£0.15	11.5%

Expend Investment History

Date	Amount	Share Price	Type
Dec 2014	£75,000	£0.005	SEIS
Feb 2017	£17,338	£0.06	EIS
Dec 2017	£3,000	£0.16	EIS
Aug 2018	£13,000	£0.10	EIS
Mar 2019	£30,719	£0.10	EIS
Mar 2020	£29,300	£0.10	EIS

Description of Business

Expend is designed to simplify expense management for SMEs and larger organisations. Expend’s vision is to offer a “zero-touch” experience via a fully autonomous expense and spend management platform for businesses.

Through an innovative mobile app and web platform, Expend provides optional contactless payment cards, receipt & invoice management, mileage tracking, spending approvals and expense reimbursements, as well as integrations with common accounting platforms, all in one platform.

Expend supports all transaction types, regardless of the source, and is developing partnerships with financial institutions, including banks, to provide turnkey solutions for their business customers.

Progress since Investment

Since the initial investment, Expend has worked hard to develop its software and business model and has developed a strong customer following and built a solid reputation in the accounting and financial space in the UK.

Growth has been steady over the last few years and has accelerated in 2022. Expend is now trusted by an increasing number of companies across various sectors. The platform works well for SMEs, and also for larger companies. Notable customers include Amazon, Cote Restaurants and AgeUK. Feedback has been excellent.

Expend has developed its commercial offering and now benefits from a hybrid, multi-revenue model. Like a typical SaaS business, Expend enjoys monthly recurring revenue from subscriptions and generates income when people use its payment products and cards (for example, through payment interchange when a card is used and fees for items like foreign exchange transactions). Expend also receives revenue from its partnerships with financial institutions.

Recent Developments

Expend’s revenues have risen steadily almost every month since the company started and have now reached £75k per month. On top of this, lump sums are received every so often from banks and others to cover the costs of integrating Expend into the bank’s software so that Expend can then be used seamlessly by the bank’s SME customers.



MolecularWarehouse.com

Company Valuation	Valuation Share Price	Fund Holding
£0.62m	£0.10	5.0%

MW Investment History

Date	Amount	Share Price	Type
Apr 2015	£75,000	£0.60	SEIS
Feb 2016	£75,000	£0.80	EIS
Mar 2016	£20,000	£0.80	EIS
Sep 2016	£52,005	£0.97	EIS
Sep 2017	£20,000	£2.00	EIS

Description of Business

Molecular Warehouse (MW) has technology to rapidly develop and test new proteins for diagnostic and therapeutic uses. MW has developed a new type of sensor for diagnostics which yields new quantitative devices. The devices take a small drop of fluid and give a numeric readout in seconds without any additional operations (like a blood glucose sensor but for almost any physiological analyte).

The key technology is an enzyme with a hinge which we call a biosensor. When the hinge is open the enzyme doesn't work and no signal is produced. When the molecule of interest is present, the enzyme is pulled into shape and the enzyme can function happily and produces a signal that is easily read.

These biosensors can be used for many applications where it is useful to know how much of a molecule is present. One area is therapeutic drug monitoring. There are several drugs where it is important that a patient has neither too little nor too much drug in their system, so patients need to be monitored until the dosing is accurately determined. MW will allow patients to measure this themselves with high accuracy and communicate back to the doctors. Its first products are aimed at the transplant market and will allow accurate monitoring of drug levels outside a hospital environment.

For the development of new sensors, MW makes use of the services of the Queensland University of Technology Brisbane where a large number of proprietary and commercial tools are brought together in one location allowing very rapid development of new products or leads.

Progress since Investment

The company has developed a sensor for calcium which may have applications in monitoring kidney disease and hyperparathyroidism. The sensor demonstrates the functionality of the whole system of biosensor, reader and software. However, it is not a sensor which is likely to be commercially successful.

MW had also been developing enzyme cascade based sensors for Theophylline (used in therapy for respiratory diseases) and Lithium (for treating bipolar disorder). MW divided into two entities in May 2020: Luas Diagnostics has licensed IP from MW and will develop the enzyme cascade based sensors. MW has a minority stake in Luas, which has now also become the distributor of a 20 minute Covid antibody test and a Covid antigen test. The lab in Guildford was closed and Andrea has taken on the role of caretaker, while Kirill Alexandrov is developing new technology for MW in the lab in Brisbane.

Recent Developments

Molecular Warehouse is in discussions to license or sell its IP. Unfortunately it is unlikely to lead to significant returns.



**ANIMAL
DYNAMICS**

Animal-Dynamics.com

Company Valuation	Valuation Share Price	Fund Holding
£17.21m	£0.40	0.9%

Animal Dynamics Investment History

Date	Amount	Share Price	Type
Jun 2015	£75,000	£0.14	SEIS
Nov 2017	£35,220	£0.36	EIS
Jul 2018	£3,001	£0.97	EIS
Mar 2020	£14,391	£0.97	EIS

Description of Business

Animal Dynamics is a spin-out company from Oxford University. It was founded by Dr Adrian Thomas, Professor of Biomechanics in the Animal Flight research group in Zoology, and Alex Caccia, an entrepreneur with start-up experience in media, technology and manufacturing and a background in finance. Adrian is an expert on how animals - birds, fish and insects - move through water and air and on land. Unsurprisingly, over millions of years, they have evolved very efficient means of doing this. Animal Dynamics aims to adapt the techniques and structures used by animals to create more efficient and effective means of flying and moving through water and over land.

Progress since Investment

Animal Dynamics has three vehicle development programmes:

1. Stork: A system for delivering packages autonomously. In Q4 2017, Animal Dynamics won a contract against 100 bidders to develop this system, and has subsequently delivered the first production units. This is now the company's lead product with full-scale production of the STM (135 kg payload, 400 km range, autonomous) planned for 2023.

2. Skeeter: A micro drone like a dragonfly. The Company successfully delivered the Skeeter project to Dstl in April, and achieved the target flight time and wind tolerance. This is a world class technical achievement, and has built unique skills in air vehicle control systems. The Skeeter nano-UAS project is on hold whilst the company focuses on Stork. During the year, the Skeeter R&D team also explored a larger propeller aircraft, after winning a DASA grant to build a highly gust tolerant mid-sized UAS called Shearwater. This project was also delivered successfully, and is on hold while focus shifts to Stork.

3. Raydrive (formerly known as Malolo): Two underwater R&D projects were successfully completed in 2019, exploring the potential of underwater autonomous systems using flapping propulsion. The first was a navigation system using the Earth's magnetic field to aid navigation, and achieved useful resolution on both latitude and longitude; the second is RayDrive, which is an underwater vehicle based on the configuration of manta rays. The prototype vehicle delivers high efficiency, low noise signature and moves well. But this programme too, is on hold.

In March 2019, Animal Dynamics raised £6m at 97p per share. The round was very oversubscribed and 50% of the SEIS shareholders took the opportunity to exit at this price (14x the initial after tax share price.) The others opted to stay for the ride.

Recent Developments

On the technical front, Animal Dynamics has continued to make excellent progress. But on the financial front, there has been chaos. OSE are the major funder and currently own more than 90% of the business. In the summer they used their control to put in additional funds but as a convertible loan note with anti-dilution provisions. It now transpires that this could have the effect of wiping out all the early shareholders including the founders, the University of Oxford and the gov't's Future Fund. We complained. The company received its first order, from the US, and worth about £1m during the quarter. The very latest news at the time of writing is that OSE has invested another £7m, (with another investor making a small contribution) which will keep the company going for just over six months months, investors, during which time additional capital will be sought from other investors. Also, the interim CEO of the last few months has resigned and Adrian Thomas, the academic founder has become CEO. OSE has said that if funding is found for the company it is likely that the anti-dilution clause would not be invoked. At the very least early shareholders will have the option to invest a little in order to avoid being wiped out.

Ducentis

BioTherapeutics

DucentisBio.com

Exit Value **Exit Date** **Multiple**
 Up to \$400m 12/09/22 Up to 127x

Date	Amount	Share Price	Type
Jul 2015	£50,000	£0.14	SEIS
Dec 2015	£30,000	£0.18	SEIS
Mar 2017	£160,275	£0.36	EIS
Mar 2018	£45,314	£0.40	EIS
Mar 2019	£53,820	£0.70	EIS

Description of Business

CD200 is a protein that modulates the activity of mature immune cells. It protects certain tissues in the body such as muscles and nerve tissue from the immune cells. People who have low levels of the CD200 receptor on their immune cells are at higher risk of autoimmune diseases. The herpes virus is able to survive in the human body by producing a protein very similar to CD200 – a viral homologue.

CD200 acts on both the innate and adaptive arms of the immune system but does not impair the function of immature immune cells so response to infections is not affected, making it an attractive target. Other groups have carried out research on naturally occurring CD200 and its homologues. They are effective but not practical, because they would require very frequent injections. By modifying CD200, Ducentis is seeking to turn it into a practical treatment. There are many autoimmune diseases that might benefit from such a treatment, including arthritis.

Progress since Investment

Ducentis made excellent progress after the investment. It first designed and then made a modified CD200 protein which requires between 1/100 and 1/1000 of the wild type CD200 to produce the same binding effect. Ducentis applied for a patent on this family of molecules and it has since been granted. In 2019 Ducentis raised a round of >£1.5m to continue its development programme. The cornerstone investor was LifeArc. Eli Lilly, a major pharma company, also announced a programme in CD200, using antibodies. They completed a successful clinical trial in Atopic Dermatitis. This encouraged Arcutis, <https://www.arcutis.com/> a Nasdaq listed dermatology company, who then acquired Ducentis in Sept 2022.

The deal was quite complicated but definitely very good for OT(S)EIS shareholders and for those who invested directly as a result of a presentation. It consisted of an upfront payment of \$15m in cash and \$15m in Arcutis shares with up to \$400m of milestone payments and mid single digit royalties for sales surpassing a high (but not impossible) annual threshold.

The deal is summarised below. Return to someone for whom we invested a total of £5k in Ducentis following an £25k investment in OT(S)EIS:

Date	Invested	Tax Return	Capital Return
2015 14p/share	£1,250	£625	
2016 18p/share	£1,250	£625	
2017 36p/share	£2,500	£750	
2022			£21,669
2023			*£35,000
Potential Future Milestones			**£800,000
Total	£5,000	£2,000	£856,669

*In Arcutis shares and escrow cash

**In steps over the next ten years, and not guaranteed.



Bioarchitech.com

Company Valuation	Valuation Share Price	Fund Holding
£7.91m	£6.00	22.4%

Date	Amount	Share Price	Type
Aug 2015	£79,560	£0.60	SEIS
Mar 2016	£40,000	£1.00	SEIS
Jul 2017	£16,200	£1.00	EIS
Oct 2017	£29,000	£1.20	EIS
Mar 2019	£89,674	£1.80	EIS
Dec 2019	£4,637	£2.80	EIS
Mar 2020	£36,758	£2.80	EIS
Mar 2021	£69,804	£4.00	EIS

Description of Business

Bioarchitech aims to improve cancer treatment by creating a drug that attracts, activates and redirects a patient’s immune system to destroy their tumours. Known as immunotherapy this technique has shown the potential to cure patients. The drug which Bioarchitech is developing will be able to be administered to many more types of cancer than is currently possible. Bioarchitech is also developing an improvement for RNA therapeutics by producing a form of RNA that can self-amplify inside cells, self-amplification may be required to achieve efficacy in diseases such as cancer using RNA.

The CEO is Dr Geoff Hale who has an international reputation in therapeutic immunology. As a scientist, he has published over 300 articles on the mechanisms of action of antibodies. He was formerly head of the Therapeutic Antibody Centre at Oxford University, and was the founder and CEO of BioAnaLab Ltd, a successful spin-out from Oxford which grew from nothing to c.50 people. Kevin Maskell is the principal researcher and developed the idea together with LiLi Wang and Hannah Chen. From 2002 -2009, Kevin was a research assistant in the department of clinical pharmacology at Oxford University, then principal scientific director of DDS, a subsidiary of Merck Millipore. Before starting Bioarchitech, he was a senior scientist at Oxford Cancer Biomarkers.

Progress since Investment

Bioarchitech's collaborations with RNA therapeutic company eTheRNA and antiviral company SIGA Technologies, inc. is progressing well. Bioarchitech is working on generating in vivo model proof of concept data using both in-house models and through contract research organisations which will take up most of its research time over the next 6-9 months.

Recent Developments

Bioarchitech is continuing to produce in vivo data which is being used to drive development decisions and for proof-of-concept studies. Bioarchitech has successfully completed the first stage of a collaboration with the company eTheRNA developing a novel RNA therapeutic platform which will be assessed for in vivo efficacy in 2023.



ORBIT DISCOVERY

OrbitDiscovery.com

Orbit Investment History

Date	Amount	Share Price	Type
Nov 2015	£100,000	£0.73	SEIS
Jul 2017	£38,245	£0.81	EIS

Company Valuation	Valuation Share Price	Fund Holding
£17.96m	£0.81	0.8%

Description of Business

Peptides are short chains of amino acids (the building blocks of proteins). They are an increasingly popular class of pharmaceuticals, sitting in between conventional small molecules and biologics such as antibodies and proteins. They can be made chemically like small molecules, but confer significant enhancements in specificity akin to other biologics, such as antibodies.

The founders are Prof Graham Ogg and Prof Terence Rabbitts FRS. The technology behind Orbit comes from Oxford University's Weatherall Institute of Molecular Medicine. It enables the rapid selection of peptides that bind onto potential drug targets using a process that minimises unintended or non-specific binding. In the identification of therapeutic candidates, this attribute can reduce unwanted side-effects in patients. The underlying technology consists of creating millions of micron-sized beads each with a unique peptide attached and mixing them with a target molecule that may be associated with a disease state. The beads that bind can then be identified and larger quantities produced for further experimentation as therapeutic candidates. If necessary, iterative steps can be made where the technology is used to further enhance properties of the therapeutic candidates, by, for example, making them easier to manufacture, or to be more stable in the human body. A particular strong capability in Orbit is to be able to screen against cells for function. This enables the technology to be used for screening agonist peptides, or peptides that switch on specific functions within a cell, at very high throughput. These agonists are more difficult to find than peptides that block activity (antagonists), but have high utility in preventing disease.

The company will partner with biotechnology companies and large pharmaceutical companies wishing to develop new peptide drugs but will also develop its own portfolio. It is hoped the technology works rapidly enough to enable tens of drug discovery programmes to be run each year.

Progress since Investment

Orbit has now developed a way to select peptides that bind to targets in solution, and on the surfaces of cells. Furthermore, the company has its first customers. Orbit completed a funding round of £5.25m in May 2018. Now at the Oxford Science Park, the team expanded to 29 employees. Due to different interests among the major shareholders Orbit split into two companies. One company will focus on T Cells, and is called T-Cypher. Shareholders of Orbit will have the beneficial ownership of 1/9th of a share in T-Cypher for every share they currently hold in Orbit. T-Cypher currently has 12,401,540 fully diluted shares. In 2021 Orbit raised £5.8m and Neil Butt joined Orbit as CEO.

Recent Developments

At the beginning of the year (2023), Orbit announced a deal with Sanogene to use Orbit's platform to identify peptides to help deliver RNAi drug to the right tissues. This has been swiftly followed by a contract with an undisclosed US based biotechnology company.

Summary

Orbit's platform is being used more widely and the excellent commercial work is starting to pay off nicely. The technology continues to develop well.

Company Valuation	Valuation Share Price	Fund Holding
£16.85m	£4.00	19.3%

Curileum Investment History

Date	Amount	Share Price	Type
Mar 2016	£75,000	£0.63	SEIS
May 2016	£25,950	£0.63	SEIS
Jul 2016	£20,000	£0.63	SEIS
Jul 2016	£20,000	£0.63	EIS
Oct 2016	£19,997	£0.31	EIS
Nov 2016	£20,002	£0.31	EIS
May 2017	£30,000	£0.31	EIS
Mar 2019	£102,020	£0.31	EIS
Mar 2020	£13,000	£1.00	EIS
Dec 2022	£29,656	£4.00	EIS

Description of Business

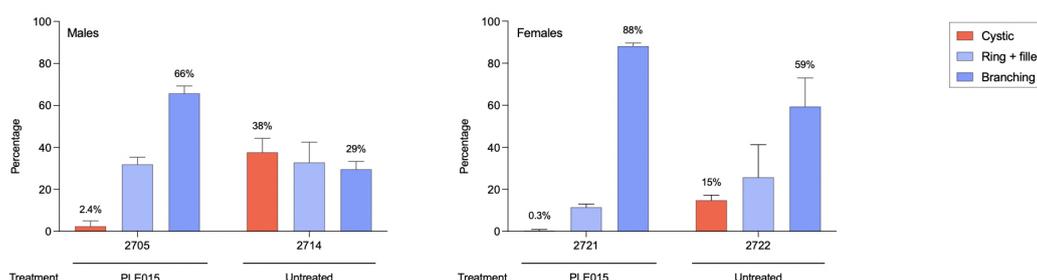
Dr Jeff Moore established Curileum Discovery in labs adjacent to St Mark's Hospital in London, one of the few hospitals in the world that specialises entirely in treating serious gastrointestinal diseases. The company has six employees: two managing operations and business development and four stem cell scientists – two of whom are completing company-sponsored PhD programmes at UCL.

Curileum aims to discover drugs to intervene early with treatments to reduce disease progression in colorectal cancer and inflammatory bowel disease. The company generates "mini-gut" organoids from patient and healthy gut mucosa to discover and characterise drug candidates before testing in preclinical in vivo models. These gut organoids are microscopic three-dimensional cellular structures that mimic the structural and functional properties of the mucosal layer of the gut. From these studies, two novel drug candidates that the company discovered are in preclinical development for licensing to pharmaceutical companies.

Recent Developments

Curileum has continued to make excellent progress with its preclinical candidates since Q4 2021:

1. **ULI-015** (ULI means powerful in Chinese) is the active small molecule compound that Curileum isolated from a plant extract component (PLE015) of a traditional Chinese medicine. The company is developing ULI-015 to intervene early in the development of bowel cancer.



The chart shows the results of a trial on pigs, which had the FAP gene which causes bowel cancer (humans who have this gene have their colons removed in their teens). On the left are the results for two male pigs, one of which was treated daily with Curileum's compound PLE015, and the chart on the right shows the same thing for two female pigs. After one month, the pigs were inspected via a colonoscopy. In the chart, healthy cells are described as branching, cancerous cells as cystic. The results are dramatic.

2. Stem cell therapy candidate for healing fistulas.

Curileum has discovered an adult stem cell in the lower region of the gastrointestinal tract that can produce a wide range of cell types in the culture dish. The company has tested the regenerative capacity of these stem cells in an in vivo preclinical fistula model. In two studies, these stem cells filled the fistula tract with healthy cells, effectively healing a fistula for the first time.

Curileum would like to find a pharma partner or a large funder to take this forward. Curileum raised more than £500k largely from existing shareholders during the quarter.



Date	Amount	Share Price	Type
Apr 2016	£37,500	£1.00	SEIS
Oct 2016	£62,500	£1.00	EIS
Sep 2017	£25,000	£1.00	EIS

Company Valuation	Valuation Share Price	Fund Holding
£1.66m	£0.25	1.9%

Description of Business

Spendology was founded by three entrepreneurs from software, foreign exchange and personal finance backgrounds. The business provides a white label solution for the travel industry which allows tour operators, airlines and travel agents to offer a mail order or click & collect travel cash add-on service to their holiday customers. Spendology Cloud allows the travel industry to increase turnover, boost profits and enhance customer retention. In 2021, Spendology launched a franchise solution, offering any business anywhere in the world the opportunity to use the Spendology Cloud platform to provide an ecommerce front-end to their foreign currency distribution business. In February 2022, the \$23bn international travel conglomerate, Internova Travel Group, signed a multi-million dollar franchise deal with Spendology for the US market. New integrations with Internova's designated inventory management system, card payment gateway and courier – coupled with implementation of an English (US) language pack – sees the platform ready to launch this year through their Altour and The Travel Authority brands, with further brands to follow later this year, before launching on the open market in the new year.

Post-pandemic Predictions

Travel chaos caused by staff shortages has marred what was beginning to look like a dramatic recovery for the travel industry in Summer 2022 – and virtually no country is unaffected. So while international travel is definitely back, it seems like 2022 will fall short of the 2019 peak. It's not just airlines and baggage handlers who are impacted – the vast majority of travel companies either cut back on staff numbers during the pandemic or are currently suffering from staff retention issues. So while passenger numbers are up, turnover is up, and profits are up – there is little management or IT capacity to do anything except respond and adapt to the current crises. The situation is slowly improving now that the summer peak has ended, although rising utility bills and interest rates are stifling forward bookings while households watch and see whether the UK falls into recession. The story is similar across Europe and the US, where recovery is slower, and travel chaos is significantly impacting demand. Nevertheless, expectations remain that pent-up demand will see Summer 2023 break all travel records.

Recent Developments

The directors and founders of Spendology remain very confident of ultimate success, but Covid was very damaging to the travel industry, and things still need to recover fully. To tide over the gap, Spendology is now seeking to raise £400,000. It hopes to complete this fundraising by the end of Q1, if not by the end of January. This should be the final fundraising and take the company to profitability. After this, A larger series A fundraising is planned to grow the company following the launch of Spendology (US).

The Board is proposing to issue shares via an Advance Subscription Agreement. This will allow existing and new investors to participate in this round, with the share price set:

1. EITHER at a 30% discount to the next raise of equal or higher value or business disposal
2. OR at £0.15, a 50% discount on the last investment round if neither of the above is achieved within 6 months

The directors, who will also be investing another £40k themselves, understand that under this model any shares issued can continue to be eligible for EIS.

Company Valuation	Valuation Share Price	Fund Holding
£7.30m	£0.54	12.0%

Active Needle Investment History

Date	Amount	Share Price	Type
Apr 2016	£50,000	£0.12	SEIS
Aug 2016	£65,000	£0.19	EIS
Mar 2017	£19,000	£0.19	EIS
Mar 2017	£30,000	£0.19	EIS
Jan 2018	£28,000	£0.26	EIS
Mar 2019	£101,781	£0.35	EIS
Mar 2020	£32,122	£0.35	EIS
Mar 2021	£55,653	£0.42	EIS

Description of Business

Doctors make use of long needles for taking biopsies or making deep injections, but the needles are difficult to see on ultrasound, and long thin needles often deflect and do not end up exactly where intended. Active Needle Technology provides minute longitudinal ultrasound movement to the needle. This results in the needle being very bright on the ultrasound (from all directions) and much less deflection. The ultrasound drive also has an additional benefit in that the force required to insert the needle is much reduced. In early studies, this has been shown to result in less pain upon insertion and less risk of overshoot.

The technology was originally invented and initially developed by Dr Muhammad Sadiq at Dundee University. The company is being led by Ian Quirk who has been a design, regulatory and clinical development specialist in medical devices for over 25 years, most recently at Lightpoint Medical.

ANT has identified biopsy needles as a market where all the advantages of the Active Needle come to bear, while the extra cost of the ultrasound driver will only have a small impact on the gross margin. The alternative products (without ANT's advantages) cost ~\$200.

Additional applications have emerged for ANT. One is a low pain, low trauma ultrasonic tattoo system (Trademarked as TranQuill), which has a \$3bn a year addressable market. The second is pre-clinical injection system (PRECIS), aimed at blue chip pharma companies drug and vaccine safety screening studies. ANT is working with Astra Zeneca and GlaxoSmithKline in the design and commercialisation of these specialised, high precision needles. Importantly, this project was proposed by AZ and GSK – so that they are set to become the first customers.

In Q2 21, the company reached a significant milestone with the award of a CE mark for its initial medical product: the high visibility biopsy device. This landmark achievement allows Active Needle to market the device in the EU, EEA, and with minor registration, the UK. The company will require additional funds to progress this phase of scale up, a process which is ongoing.

Recent Developments

Further work has taken place on testing Active Needle with the delivery of drugs into tumours. Although further optimisation is needed, it is clear that better penetration is achieved. One of the companies we are working with would like it to be in the clinic by the end of the year. ANT has identified the parameters of the cancer drugs for which the device might be useful. It is best for drugs that have good specificity but require relatively high concentration so that systemic delivery is not practical.



The drivers - the part that delivers modulated power to the handpiece - for the Tranquill tattooing system are progressing well. Here is a first photo of the device. Testing with tattoo artists is due to begin.

Work is also progressing on the biopsy device, ensuring that manufacturing is optimised and costs reduced. Discussions have started with potential distributors for the biopsy device.

Active Needle is starting a fund-raising round to progress both the medical and cosmetic applications.



ONI Investment History			
Date	Amount	Share Price	Type
Apr 2016	£100,000	£0.02*	SEIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Company Valuation	Valuation Share Price	Fund Holding
£129.367m	£0.21	0.8%

Description of Business

Oxford Nanoimaging is a spin out from the biological physics lab of Prof Achillefs Kapanidis at Oxford University. It specialises in super resolution microscopy, which refers to being able to resolve dimensions smaller than the wavelength of light. Prof Kapanidis, Robert Crawford and Bo Jing have invented an optical assembly which allows a microscope to be shrunk from the size of a small car to the footprint of a tablet (with a PC sized box under the bench). This not only gives a big advantage in crowded and expensive laboratories, it also does away with many of the adjustments and control requirements of other super resolution microscopes, making it suitable for beginners and experts. With the microscope, it has been possible to image the processes of DNA repair in a cell. The expertise in the company is not only in the device, but also in the molecular biology techniques and the image processing. A bit like a smart phone, we expect there will be advances both in the hardware and in the applications that can run on it. The company is aiming for rapid expansion, with a distribution network being developed around the world. The company also has the backing of Oxford University Innovation and Oxford Science Innovation.

Progress since Investment

Good initial progress was made with sales of nanoimagers exceeding expectations. In March 2017, the company raised £3m at £62.50 per share compared to the initial price of £20 per share to accelerate the rate of growth. In Q2 2018, the company raised \$25m at £173.40 per share. The money came from existing shareholders, and from new shareholders from New York, China, Singapore and London.

ONI moved its headquarters to San Diego.

Recent Developments

The funding round in Q2 22 ended up at \$75m at an effective share price of about 21p per share.

ONI is being used widely in academia and industrial research and has given rise to 123 publications. The most commonly cited technique cited is dSTORM, a method which enables tracking of individual molecules with a resolution of 20nm. You can see some of the fantastic images captured by ONI’s microscopes here <https://oni.bio/applications/gallery/> .

We have not received any recent financial information from the company. From Companies House we know that sales increased to £5.5m in the year to 31 Dec 2021, up from £4.4m in the year before.



entia

Entia.co

Company Valuation	Valuation Share Price	Fund Holding
£22.44m	£35.64	1.8%

Entia Investment History

Date	Amount	Share Price	Type
May 2016	£75,000	£14.78	SEIS
Oct 2016	£9,504	£14.78	EIS
Nov 2017	£48,554	£21.96	EIS
Feb 2019	£89,934	£31.79	EIS
Mar 2021	£26,017	£35.64	EIS

Description of Business

Entia was founded by Dr Toby Basey-Fisher in 2015. Entia is empowering cancer patients with greater freedom whilst also equipping healthcare professionals with the insights to make more informed and personalised clinical decisions regarding treatment toxicity. At the heart of Entia’s approach is a novel and easy-to-use blood analyser that allows patients to perform a suite of blood tests in their own home. It is launching in 2022 with the capability to monitor haematological toxicity of cancer treatment via a patient’s full blood count. Results are seamlessly shared with healthcare professionals via Entia’s cloud network and integration tools. This approach creates new insights into how individuals are responding to care and subsequently may enable more personalised decisions to mitigate life-threatening complications.

Entia has also launched a home monitoring solution for anaemia of chronic kidney disease under its Luma brand (www.lumahealth.uk). The product and service, which is similar to the upcoming Liberty solution, has been very well received with 100% patient preference over previous care pathways.

Progress Since Investment

Home monitoring has become the main focus for Entia, with multiple large pharma companies partnering with Entia to deliver the company’s virtual solutions as part of blockbuster therapies. Entia’s main focus is currently to bring its virtual oncology solution, Liberty, to market. The name reflects the freedom given to patients to be at home or at work rather than travelling to hospital for routine blood tests required to monitor the toxic side effects of cancer treatment.

The company employs 52 people. To date, the company has raised over £14m through equity financing and £5m from government grants. This has allowed the company to develop a multi-award winning team, establish world-leading clinical and pharmaceutical partnerships and positively change patients lives with its innovative products. The company’s management systems have achieved accreditation against ISO 13485 and ISO 27001. The company also CE marked and launched Luma in 2020 for managing anaemia of chronic kidney disease.

Recent Developments

Pfizer announced its partnership with Entia in September 2021. The collaboration with Pfizer continues to go well. The development of Liberty is now fundamentally finished and the team is really focusing on commercialisation rather than R&D. Having said this development hasn’t stopped and there is work being carried out on manufacturing cost effectiveness. This is becoming important as the scale of the opportunity becomes increasingly clear. By making testing so much easier (and requiring less blood each time) it will be possible to increase testing frequency and pick up potential patient problems early. Early detection will improve outcomes and reduce costs (very much).

We have no news from the company to report.

Summary

Entia has a publicly announced partnership with Pfizer and work with other companies is progressing.



Covatic.com

Company Valuation	Valuation Share Price	Fund Holding
£11.02m	£18.00	3.7%

Covatic Investment History

Date	Amount	Share Price	Type
Feb 2017	£39,776	£8.00	SEIS
Feb 2017	£60,224	£8.00	EIS
Feb 2018	£30,000	£16.00	EIS
Mar 2021	£67,997	£9.41	EIS
Apr 2022	£37,926	£18.00	EIS

Description of Business

For the past 20 years, Google and Apple and other tech companies have gathered and sold data about their users browsing habits, via cookies, and sold this data to advertisers. This has now become unacceptable and Apple have given people the ability to opt out. 85 % have done so, and advertising revenues have slumped.

Covatic has developed a set of tools, now branded ‘A-Type’ which sits on a user’s phone (within the client's apps) and gathers data about a user and can then categorise the user into one of 1,000 types. So a particular user might be female, aged 30-35, with two young children, a car and a weekly shopping bill of £50-£75. The app might be able to offer 105,000 of this category to an advertiser who could then advertise nappies. But the user’s data never leaves her phone and is unknown to the advertiser.

‘A type’ is now being deployed by an increasing number of the world’s largest broadcasting organisations.

Recent Developments

Covatic has continued to make excellent progress. The number of homes in which the A-Type is deployed has now risen to more than 50m. Revenue to Covatic comes in the form of a monthly fee to use its platform and a share of the advertising revenue generated. Sales have been rising steadily and are expected to show a big jump from January onwards as several new contracts, including one very large, will begin to generate monthly cash payments. Covatic expects to be above monthly cash flow breakeven from January. Congratulations to the founders.

However, the latest news is that the term sheet for the long-discussed offer of investment (received just before Christmas) is at a significantly lower share price than had been expected.



EW-Technologies.com

Electrowinning Investment History

Date	Amount	Share Price	Type
Feb 2017	£25,000	£0.10	SEIS
Sep 2017	£35,000	£0.50	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.03m	£0.04	39.0%

Description of Business

Duncan Grant is an electrical engineer and spent his life in academia, at Bristol University developing novel methods of controlling minute currents and voltages to minimise power consumption and also controlling very high currents. At one time he developed a radio which used 1/10 of the power of the next lowest powered radio, and which had been intended for use in low income economies. The purpose of the investment in Electrowinning Technologies was to improve the quality and quantity of copper produced in electrowinning and electro refining plants by controlling the huge currents used in these plants with greater precision than had ever been done before.

Progress since Investment

The business started well when a contract was obtained to install the system in a single cell in a large European electrorefining plant. The hope was that this would have demonstrated the economics of the business, both the improved quality output and the reduction in power used. However, just before the system was due to be installed, and for reasons which remain unclear but which were believed to be political/internal management issues at the client customer, the contract was cancelled at the last moment.

So since then Electrowinning Technologies has been in mothballs.

The company continues to inform the mining industry of our existence and our hopes for the technology.

Recent Developments

There has been little progress in the last quarter and the company remains in mothballs. The renewal fees on the patents have been paid and there are no paid employees. Unless a way forward can be found, it is likely that the company will be wound up, in which case investors will be able to obtain loss relief on the investment. There has been no change to this situation over Q4.



LupeTechnology.com

Company Valuation	Valuation Share Price	Fund Holding
£10.32m	£4.50	11.1%

Date	Amount	Share Price	Type
Feb 2017	£51,000	£0.68	SEIS
Feb 2017	£30,000	£0.68	EIS
Mar 2018	£51,000	£1.50	EIS
Mar 2018	£37,001	£1.50	EIS
Mar 2018	£9,999	£1.50	EIS
Mar 2020	£138,719	£2.78	EIS
Mar 2021	£50,243	£3.50	EIS
Apr 2022	£27,864	£4.50	EIS

Description of Business

Lupe was formed to design and launch a better vacuum cleaner. One that would work well and last a long time, with all parts designed to be maintained and replaceable, unlike today’s throw-away vacuums. The two founders were previously on the engineering design team at Dyson.

Progress since Investment

Lupe has made excellent progress. The production prototype was completed in Sept 2018 and rapturously received at a huge trade fair in Germany. In 2018 Lupe did a kickstarter campaign hoping to raise £75k by asking people to pay 9 months in advance of delivery, to help fund production, but raised £650k. In summer 2020 the first production units arrived. Lupe received rave reviews with over 250 media articles, and was judged to be by far the best cordless vacuum cleaner in the world by Vacuum Wars, which, in its own words, is strictly for nerds. They test everything (eg putting 100g of sand on a deep pile carpet and weighing the amount collected by each brand). You can see this video at shorturl.at/aoKU1.

Partly as a result of these excellent reviews and the associated comments on social media, Lupe achieved steadily rising sales direct from its website with almost 90% of the sales being in the US, a market which Lupe hadn’t expected to target initially. This is excellent, given that it’s one of the largest markets for vacuum cleaners in the world.

In Q4 21, Lupe became a victim of its own success when it completely sold out of stock. However, it transpired that people were prepared to order and pay in advance for delivery up to five months later.

Recent Developments.

During 2022 Lupe has achieved year-on-year revenue growth of 40%, despite declining consumer demand across the globe. It is very close to break-even despite being early stage, but the change in the economy means that to achieve break-even, Lupe will be streamlining its costs and increasing its retail price in the USA, where that is the recent norm.

Lupe really needs to raise a larger sum, say £5m, so that it can operate in a less hand-to-mouth manner and take decisions with a longer time perspective. However, its sales track record is so short that it believes it would struggle to raise this amount at a reasonable valuation.

Lupe has consistently good press and recently has had some great coverage in The Wall Street Journal.



ProcessVision.com

Company Valuation	Valuation Share Price	Fund Holding
£14.07m	£5.00	2.4%

Process Vision Investment History

Date	Amount	Share Price	Type
Mar 2017	£99,999	£3.00	SEIS
Jun 2018	£3,000	£3.00	EIS
Mar 2021	£68,494	£2.00	EIS

Description of Business

Process Vision Ltd has developed an inspection system for gas pipelines. Paul Stockwell, the founder, worked for many years in the field of sensors for the gas and oil industry and became acutely aware of the requirement for detecting and measuring liquids in gas pipelines.

Gas pipelines should transport clean, dry gas, but PV's initial product, LineVu, is revealing that there are often liquids present in the gas. This has two major implications for the industry:

Financial: Natural Gas Liquids (NGLs) are recovered from the gas during gas processing. These are mainly Ethane, Propane and Butane and command a high price. In fact, some gas processing plants are paid more for NGLs than gas. LineVu is discovering that, due to measurement sampling standards, many of these liquids are missed, and failures in NGL recovery processes go unnoticed, resulting in NGLs being sent to the gas line where the supplier misses out on revenue.

Safety: Sending liquids into gas systems is unsafe. Gas compressors and gas turbines in power stations rely on clean, dry gas and suffer increased maintenance costs when liquids are present in some cases leading to the complete failure of the compressor or gas turbine. In addition, corrosion in pipelines occur when liquids are allowed to enter the system.

These two aspects are the market drivers to install a camera and discover what is actually happening in the pipeline.

Progress Since Investment

COVID restrictions hampered sales progress, but now these have been lifted, and significant progress has been made.

Recent Developments

It is as if a dam has burst, and suddenly, all the things that have been on the horizon for months, and in some cases for years, are now happening. Saudi Aramco has taken delivery of its first LineVu trial system. Discussions indicate a need for 60 systems in one particular site alone.

The business model is for an upfront payment followed by a monthly license fee to include maintenance.

A system has been installed and is now operating at Storengy in France. Storengy is a system in which gas is stored at a pressure in a vast underground cavern in summer and then used in winter. It is believed they may require 30 LineVu systems

There is much interest in the US. Process Vision gave a workshop at the GPA Midstream, an industry gathering attended by 10,000 delegates. The number of LineVu systems installed has increased to 8.

Process Vision approached its shareholders for additional capital and has so far received £660,000 at an increased share price of £5.

Congratulations to Paul Stockwell and his team.

GRIPABLE

Gripable.co

Company Valuation	Valuation Share Price	Fund Holding
£17.54m	£5.47	2.1%

Gripable Investment History

Date	Amount	Share Price	Type
Sep 2017	£49,999	£2.27*	SEIS
Feb 2019	£106,934	£4.21*	EIS
Dec 2020	£33,219	£5.47	EIS
Mar 2022	£69,682	£5.47	EIS

*Adjusted for 100:1 share split. EIS certificates remain valid.

Description of Business

Worldwide some 430m people suffer with hand and arm disabilities. The current treatment for people who have lost the use of a hand following a stroke is to squeeze a ball, repeatedly maybe for up to 8 hours. This is extremely boring.

Dr Paul Rinne, a doctor who had been doing research at Imperial College on the rehabilitation of stroke patients, and Mike Mace, a robotics engineer at Imperial, developed an intelligent variable strength grip, which incorporates accelerometers and wi-fi. This means that a patient is able to play computer games which makes life much more interesting and with the result that patients enjoy their therapy and recover much more quickly. The founders have developed a range of games whose difficulty can be increased to match the returning dexterity of the patient. The brain is extremely plastic, and although a stroke may have destroyed the areas previously responsible for hand operation, given the right feedback the brain is able to relearn how to control hands, using entirely new areas.

Progress since Investment

ISO 9001 and 13485 have been awarded.

The team has expanded and is working on the software which is not just standalone games, but also a framework which tracks the patient's progress. One of the key features of Gripable is the possibility to interact at a distance with other patients or relatives. It can also distinguish between situations where activities are limited by physical capability and those where mental abilities are holding back progress. The trainers who make use of Gripable particularly like the ease with which Gripable can be set up and used. A study at Imperial showed a vast increase in exercise among patients given the opportunity to use the device. An example of the benefits of Gripable can be seen in a case study of a stroke patient. His grip strength rose from 0.8kg to 12kg. This was achieved by the patient spending 160hrs over 30 weeks with the device. With a normal therapist that might have cost £15,000 and in normal unassisted care, a patient might only average 200 reps rather than the 10,000 reps the patient achieved. In 2022 Gripable raised £8.3m investment in order to push forward the US and promptly closed a deal with Medline.

Recent Developments

There are now 2000 Gripables in the hands of 1400 customers or clinics. In the UK, most of the use of Gripable is in neurorehabilitation. In the US, there is a lot of musculoskeletal use as well. The Medline agreement has started, and Paul and the team are putting in many hours and air miles to ensure the product is adopted widely. As is often the case when a new technology is being introduced, it still requires a lot of input from Gripable to make sales, even though Medline is providing excellent access to customers. The key point is helping the purchasers understand how they can increase their income. The answer is being able to charge for remote therapy and having happy users.

Summary

While the Rest of the World is doing well, Gripable is focusing on growing the US market and is busy evaluating possible locations for its base in the US.



Darkbeam.com

Company Valuation	Latest Share Price	Fund Holding
£8.60m	£3.00	7.1%

Date	Amount	Share Price	Type
Oct 2017	£50,000	£1.00	SEIS
Feb 2018	£25,000	£1.00	SEIS
Feb 2018	£10,000	£1.00	SEIS
Mar 2018	£18,200	£1.00	EIS
Sep 2018	£50,000	£0.50	EIS

Description of Business

Lots of bad things happen on the web, which has become so large (>1bn servers) that it has become difficult for law enforcement agencies to track. Darkbeam offers services which enable companies to identify weaknesses in their online presence, and manage the cyber risk they are exposed to through their third-party relationships, like their complex supply chains.

Progress since Investment

Having had a challenging first year, which resulted in a change of managing director, Darkbeam is now positioned as a Digital Risk Protection (DRP) and Third-Party Risk Management (TPRM) Platform. There are three main planks in one simple-to-use offering:

- Cyber Vulnerability Intelligence: this is the real time mapping, classification and prioritisation of a company’s digital footprint and vulnerabilities on the open web – including the dark web. This data doesn’t just include data that has accidentally leaked from a company but also private credentials.
- Cyber Threat Intelligence: the real-time monitoring of hackers and their behaviours.

Cyber Vulnerability + Threat Intelligence = Darkbeam’s Cyber Score

These variables roll up into the Darkbeam score (1 low – 999 high risk) which provides an analyst a predictive indicator as to the vulnerability of a company. This is important in insurance and supply chain circles. The Darkbeam score for any company can be obtained in seconds.

During 2022, Darkbeam has raised additional capital at £3 per share and has been growing the sales and software development teams. The business model is that companies sign up for a yearly contract, during which Darkbeam continuously monitors the websites of the client and its supply chain to check for vulnerabilities. This service is known as “Enterprise Attack Surface Management”.

Recent Developments

Corporate Developments: Darkbeam has received another approach from a well-known and well-regarded US company which is owned by one of the largest global private equity firms. An LOI has been received and this is being processed.

Investment: Darkbeam has received firm interest from a large investor to invest up to £3m at between 300p and 400p. This has not been closed and been frustrated by recent events in global markets. The firm has a number of smaller investors which it is engaged with.

Darkbeam has signed up and actively engaged with 4 channel partners where revenue targets have been agreed. These targets range from £500k to £1m each. This is a material and positive step forward. Darkbeam expects that this work will start to bear fruit in Q2.

Recognition: Gartner, a well regarded technology research firm, has recognised the company in its recent review of Supplier Risk Management Solutions.



Date	Amount	Share Price	Type
Jan 2018	£50,000	£0.95	SEIS
Jan 2019	£75,050	£2.14	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.69m	£2.14	7.0%

Description of Business

Whilst knee and hip replacements are quite common, elbow replacements are much less so. One of the reasons is that the only surgical solution on offer had been the total elbow replacement which left the patient unable to rotate the wrist and only able to lift very modest weights. The treatment was therefore only offered to retired people. The alternative treatments were drugs and removal of part of the elbow. Mr. Joe Pooley, who is a top orthopaedic surgeon, realised that almost all elbow problems start with the outer elbow joint and developed a replacement joint that only replaces the ends of the bones.

The technology was developed in 2005 and licensed to a large medtech company. The medtech company later underwent a merger and returned the ownership of the IP to Joe Pooley. With his brother, David Laskow Pooley, he has created LRESystem to develop and commercialise the Lateral Resurfacing Elbow.

LRESystem has been developing a kit (Elbow in a Box) so that everything the surgeon needs will be in one sterile pack. With an improved surgical technique, it will be possible to carry out the surgery very quickly so the decision to have surgery rather than taking strong immunosuppressive drugs and painkillers will be quite easy. The market for replacement elbows may become much larger than it is currently.

Progress since Investment

Everything went well with production and sterilisation certification. The biggest delay was in going through the hugely bureaucratic (and expensive) process of obtaining a CE mark. LRE’s Elbow-in-a-box finally obtained its CE mark on 11th March 2020.

Year	LRE Elbows Sold	Cumulative Total
2019	9	9
2020	19	28
2021	0 (Covid)	28
2022	16	42

Covid meant that all elective surgery ceased all over the world and there were no LREs installed in 2021.

Recent Developments

Elbow surgery has resumed post-Covid, and LRE is making modest sales. There are grounds for believing that interest is growing among surgeons, but there remains a long way to go. Also, the company will need to replenish its stock of LREs at some point in the next 6-9 months.



Atelerix.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£2.68m	£0.90	10.4%

Date	Amount	Share Price	Type
Jan 2018	£50,000	£0.82	SEIS
Apr 2019	£133,187	£1.70	EIS
Mar 2020	£196,851	£1.95	EIS
Jun 2021	£44,767	£0.80	EIS
Nov 2022	£11,099	£0.90	EIS

Description of Business

Cell cultures are widely used in medicine. Whether it is to test stem or T-cells for new procedures or to develop new drugs, the cells need to arrive at the place of use in the best possible condition. In most cases, when cells (or assemblies of cells) need transporting, they are cryogenically frozen, shipped, then thawed and brought back to functioning status. The process has many steps, is expensive and time sensitive – you don't want the cells to thaw in transit. Some cell types can withstand this treatment without problems, but many cell types struggle, with delayed cell death rendering experiments invalid or difficult to interpret. There are some cell assemblies that cannot withstand freezing at all and are therefore impossible to ship.

Prof. Che Connon's group in Newcastle discovered that when their special gel was put on cells, the cells were just suspending their function and when the gel was removed, they resumed as if nothing had happened. The gel also protects the cells during transportation. Atelerix may play an important role in enabling the development of drugs for complex conditions, enable easier administration of stem cell therapies, and better handling of pathology samples. Its three products are BeadReady, WellReady and TissueReady. Mick McLean, founder CEO and now Non Executive Director and adviser, has led new ventures and start-up companies in drug discovery and development, pharmaceutical manufacturing, research tools and contract research.

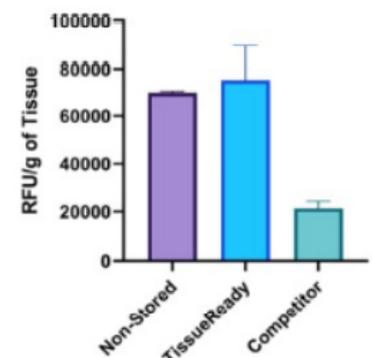
Progress since Investment

Atelerix' first deal was signed in India with LVPEI in Q2 2018 for a stem-cell treatment for corneal blindness. Using Atelerix technology, the treatment will be available all over India. Sales of kits have now started and there are distributors around the world. Cells, tissues and organoids from all over the body are being stored and transported. Some others have particular needs which require Atelerix to run experiments.

Atelerix moved into new premises during the Summer of 2019 and expanded the team bringing on new people in the lab and growing its research and development operations. It has several Innovate UK projects underway, for research and therapeutic applications.

Recent Developments

Atelerix continues to make progress. Its fundraising round is going well. Their new product, CytoStor has already started delivering sales. Atelerix is supporting LifeTime CDT, a doctoral training centre for cell therapies. Three projects have started using Atelerix gels to test their use in kidney cell preservation, in mimicking the bone marrow to study the behaviour of blood stem cells, and in the growth of pancreatic cancer cells. Internal testing shows that Atelerix Tissue Ready can also store skin samples very well over a 6 day period, while the next best commercial storage solution only returned 30% of live cells.



Summary

Good progress all around for Atelerix, both in sales and research. Their fundraising round is almost complete.



Refeyn.com

Company Valuation	Valuation Share Price	Fund Holding
£200.83m	£5.00	1.5%

Refeyn Investment History

Date	Amount	Share Price	Type
Jun 2018	£66,240	£0.40*	SEIS
Jun 2018	£33,760	£0.40*	EIS
Jan 2019	£121,851	£0.64*	EIS
Jul 2019	£67,468	£0.64*	EIS

*Adjusted for 100:1 share split. EIS certificates remain valid.

Description of Business

Refeyn (named for the physicist Richard Feynman) was previously called Arago Biosciences. Refeyn is a spin-out from the University of Oxford that has developed an optical technology able to determine the mass of individual molecules in the range from 40 kDa to >5 MDa (Daltons is another name for Atomic Mass Units). This range encompasses most proteins and assemblies of interest to medicine. The measurement can take place in solutions with a wide range of biologically relevant concentrations and is rapid, with only a few minutes being enough to collect high quality data. A very helpful animation has been added to the Refeyn website (www.refeyn.com) showing how the device works.

The technology has brought together experts from a range of fields; optics, image processing, software, chemistry and biology. Prof Philipp Kukura invented the interferometric scattering methodology, Prof Justin Benesch is an expert in mass measurement techniques and applications, and Daniel Cole and Gavin Young are graduate students who developed the prototype hardware, software, and experimental methodologies. The team is growing quickly and very good people have been attracted to the opportunity including Jonathan Flint, former CEO of Oxford Instruments who has joined as chairman and Anthony Fernandez, the new CEO.

Refeyn now highlights 4 key applications of its technology: determining sample composition and purity; the assembly of protein complexes; the measurement of complex biomolecules; and understanding protein-protein interactions. Refeyn is developing and manufacturing a range of devices with different capabilities, from quality-control type instruments to full-blown research tools.

Progress since Investment

In 2019 Refeyn won 3 top awards for innovation from the Royal Society of Chemistry, R&D magazine and The Scientist. In Nov 2020 Refeyn raised £18m. New CEO Anthony Fernandez joined from Teledyne e2V and Philipp Kukura has moved back to the University and remains closely involved with Refeyn as a non-executive director. Part way through 2021 Refeyn launched the Refeyn TwoMP which has replaced the OneMP. In 2022 they launched the SamuxMP to measure the full empty ratio of AAVs - viruses used in cell and gene therapy. These have now been joined by the TwoMP Auto which as the name suggests allows automation of certain functions and allows the user to walk away from the instrument and then return to a set of results. In 2021 Refeyn made its second move, to a new building in Littlemore, Oxford to enable it to expand manufacturing and operations. Refeyn is now also able to carry out extensive demonstration and testing work with companies without having to use university labs. Manufacturing pace has increased and sales numbers have increased satisfactorily.

Recent Developments

In addition to the two offices in the US, one on each coast, Refeyn has also opened an office in Kobe, Japan. This is in addition to its worldwide network of distributors.

Another 40 publications citing Refeyn were added to Google scholar this quarter bringing the total for 2022 to 160. That's more than the total number of publications in the first three years combined. One example of using the technology is to rapidly identify the best detergent to prepare samples for electron cryo microscopy. Refeyn's ability to rapidly see whether proteins stick together (which you don't want for ECM) is critical here.



Cytecom.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£1.35m	£2.23	29.5%

Cytecom Investment History

Date	Amount	Share Price	Type
Jul 2018	£100,440	£1.55	SEIS
Nov 2019	£55,000	£1.55	EIS
Dec 2020	£84,021	£1.55	EIS
Mar 2021	£53,986	£2.23	EIS

Description of Business

Many people all over the world need to test for the presence of live bacteria, for example hospitals and the water, food and brewing industries. Currently, the procedure is to place the sample in a media-containing dish and then wait for several days while cultures develop which can then be analysed. Cytecom has developed and patented a technology in which a fluorescent dye is added to a sample, which is then placed between electrodes and a voltage shock applied. (The precise nature and timing of the shock may be varied to achieve particular results. This is part of the know-how). The electric shock alters the cell membranes so that living cells take up the fluorescent dye at an increased rate. Dead cells will not take up the fluorescent dye. Measuring the change in fluorescence over the few seconds after the shock gives a count of the living cells.

Cytecom is a spinout from the Asally Lab in the Warwick Integrative Synthetic Biology Centre at the University of Warwick. The academic research that underpins Cytecom technology has been published in the Proceedings of the National Academy of Sciences of the United States of America and can be read at <https://doi.org/10.1073/pnas.1901788116>. Before the initial investment, Cytecom was awarded an Innovate UK grant of £230,000 which officially started in November 2018.

Progress since Investment

Cytecount is a stand-alone device about the size of a small shoebox. It contains proprietary electronics, optics and software to count the number of live cells in a sample. Users simply have to place a sample on the special slide (which contains the electrodes for administering the shock), and Cytecount will then carry out the procedures automatically to give the user a readout of the number of live cells in each sample. Cytecount was demonstrated publicly for the first time at Lab Innovations at the NEC in October 2019, where there was interest from various industries. The first sale was achieved in Q1 21. In that quarter, the company also raised £150,000 at £2.23 per share to further develop the device and hire a distribution team. Dr Magdalena Karlikowska, microbiologist and ex-PHE clinical scientist, joined Cytecom as CEO in April 2022 to lead the expansion into new geographies and sectors. Former CEO James Stratford took up the role of CTO to coordinate product development.

Recent Developments

Cytecom has continued to make slow progress. Although a number of potential customers have had trials, Cytecom has yet to find anyone who is actively using the instrument on a daily basis. But work on making the machine easier to use continues and some universities have put the purchase of a machine in their grant application.



PolyCAT.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£4.02m	£0.25	18.2%

PolyCAT Investment History

Date	Amount	Share Price	Type
Oct 2018	£50,002	£0.03	SEIS
Mar 2019	£22,058	£0.13	SEIS
Mar 2020	£11,985	£0.13	SEIS
Dec 2020	£112,998	£0.19	EIS
Feb 2021	£11,784	£0.19	EIS
Apr 2022	£60,350	£0.25	EIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Description of Business

PolyCAT has developed an economic, scalable process to produce metal nanoparticles on polymer substrates. This has allowed the company to develop a range of products across diverse applications, from highly antiviral materials for use in healthcare, to catalytic spill kits that can degrade extremely hazardous industrial chemicals. The following are in commercial development:

Steri-CAT Antiviral coating - During the pandemic, PolyCAT developed a method of producing materials impregnated with colloidal silver and copper, both famous for their antimicrobial properties. Extensive testing has confirmed that the coating deactivates viruses within minutes and can be produced to scale at a low cost, allowing PolyCAT to make continuously self-disinfecting disposable PPE items that previously were not cost effective. This has led to the company building a pilot production line for a major PPE producer which has been asked to produce PPE stockpiles for various governments for use in future pandemics. The suits have passed most of the approval tests with the customer, but several steps are still outstanding. PolyCAT is now translating the work done in a pilot plant into a much larger machine and is talking to manufacturing partners to get this made. This would be a major turning point for PolyCAT and the team are very focused on winning this business.

Spill-CAT - PolyCAT has developed a range of catalysts that can degrade chemical warfare agents discovered in the field. A joint project run with the UK MoD and US DoD showed some good preliminary results, winning a competition for the best solution back in early 2022. PolyCAT's follow-on project, entirely funded by DSTL Porton Down, has now completed and has discovered an enhanced solution that is currently undergoing testing against real warfare agents. Whilst the company cannot disclose many details, it does now have a clear idea of market size and capability and is expecting serious orders from Q3 2023.

Recent Developments

The company has spent Q4 solidifying its IP position and solving manufacturing problems, ready for scale-up in 2023. PolyCat still anticipates that Spill-CAT will become the first product to reach the market, with Steri-CAT volume sales occurring in the second half of 2023. PolyCat is also still in discussions with a US-listed materials company that restarted contact in Q3 last year. The nature of this project cannot be disclosed at present, but PolyCAT expects this to result in significant investment and possibly set the company on the pathway towards acquisition.



AsymmetricSuzuki.co.uk

ASR Investment History

Date	Amount	Share Price	Type
Mar 2019	£65,040	£5.42	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.1m	£4.00	37.5%

Description of Business

The ability to synthesise complex chiral molecules is of increasing importance across the chemical industries. Challenges with asymmetric catalytic processes have limited the ability of drug development and agrochemical screening programmes to access new chemicals. Stephen Fletcher, Professor of Chemistry at University of Oxford, has developed efficient and low-cost solutions to some of the most difficult problems in asymmetric catalysis. Together with Dr Sarah Morrow, Stephen has formed Asymmetric Suzuki Reactions (ASR) to provide better access to existing complex targets and new chemical space. ASR will provide:

1. A digital compound library for screening
2. Custom compound libraries
3. Process design for chemical manufacturing
4. Custom synthesis of complex chiral molecules
5. New active molecules and discovery of new targets

In order to develop the opportunity, Oxford Technology invested £65,000 in March 2019. The initial market scoping and business development phase sought to de-risk the project for a more substantial seed investment. ASR has the capacity to provide small amounts (<1g) of compounds of interest to potential partners. These can be synthesised in an ad hoc fashion to avoid the need for long term rental of laboratory space.

Progress since Investment

Asymmetric Suzuki Reactions developed its website and marketing materials for circulation to > 30 potential customers and collaborators, with contacts generated by attending conferences and by word-of-mouth. Initial interest led to conversations with approximately half of this group, and ASR was invited to present at the Agrochemical company Syngenta. However, although one pharma company expressed interest in using ASR's technology, no contract with suitable payment was forthcoming and ASR was therefore put into hibernation at the end of Q1 2020.

Recent Developments

In the last quarter, ASR has made something of a breakthrough in the lab, demonstrating that the reaction works at a much lower concentration and that they were able to produce hundreds of grams of product, indicating that the process could be scaled up.



OxWash.com

Company Valuation	Valuation Share Price	Fund Holding
£26.69m	£6.69	3.0%

OxWash Investment History

Date	Amount	Share Price	Type
Mar 2019	£50,000	£1.13	SEIS
Mar 2019	£50,000	£1.13	EIS
Nov 2019	£54,679	£2.45	EIS
May 2021	£36,069	£3.58	EIS

Description of Business

Kyle Grant, an ex-NASA scientist and Tom de Wilton an Oxford Engineer, aim to transform the laundry and washing market. They spent the 18 months before the investment designing and iterating the process while also developing and implementing the sales and logistics mechanisms.

The idea is to have a commercial and hyper-sustainable laundry in a shipping container style box or disused commercial unit. The laundry may be placed anywhere and can be operational within hours. The laundry will be primarily for contracted regular B2B customers such as organisations who run multiple Airbnb units. They need to wash tablecloths, sheets and towels in volume and on short notice. These modules may be bolted together to make a larger unit.

The Oxwash system is super energy efficient. Using special technology, washing is close to room temperature. The main oxidising (deodourising and disinfectant) agent is Ozone, generated on site. Solar panels on the roof collect energy, which is stored in a large battery or fed into the grid. Water is filtered and recirculated, so microfibres or damaging chemicals will not be discharged to the environment. A sludge tank will need to be emptied periodically. A state-of-the-art automated ironing and folding machine has also been incorporated. Delivery and collection are performed exclusively by electric cargo bike.

Progress since Investment

The first unit, in Oxford, became operational in Q3 2019 as planned. The laundry is arguably the most energy efficient and the most environmentally friendly laundry on the planet. The plan is now to open more units, starting the UK but expanding globally. The revenue has recovered since Covid and Oxwash had three operating units by summer 2021, in Oxford, Cambridge and London. The London branch has now become the administrative and technological headquarters.

Recent Developments

Q4 is generally a quiet quarter for laundries, with sales typically down on the summer months. Oxwash's sales were not down but instead were flat, running at about £150k per month. Oxwash is now planning to add a central and fully automated laundry hub in Swindon, which will be fed with much larger volumes of laundry by electric lorries. It is hoped that this facility will be the most advanced laundry anywhere using all the latest technology and with the extensive use of robots. The first contract, worth £65k per year has been signed.



**THE
SMARTER FOOD
COMPANY**

SmarterNaturally.com

Smarter Food Investment History

Date	Amount	Share Price	Type
Apr 2019	£89,998	£1.97	SEIS
Mar 2021	£96,058	£2.70	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.39m	£3.00	10.2%

Description of Business

The Smarter Food Company (TSFC) was established to produce a food to reduce blood glucose (FBG) levels in people who are defined as being ‘pre-diabetic’. This could have a significant impact on the incidence of type-II diabetes (T2D), which is a major and growing problem throughout the world. Globally, there are over 1bn pre-diabetics and 370m diabetics. In the UK alone, diabetes costs the NHS £10bn per year, equivalent to 10% of its annual budget. So a preventative measure could make a big difference. TSFC’s initial product is soup manufactured from a unique and proprietary variety of broccoli that has been naturally bred to contain very high concentrations of glucoraphanin (VHG). The science for this comes from the Quadram Institute (formerly known as the Food Research Institute).

Recent Developments

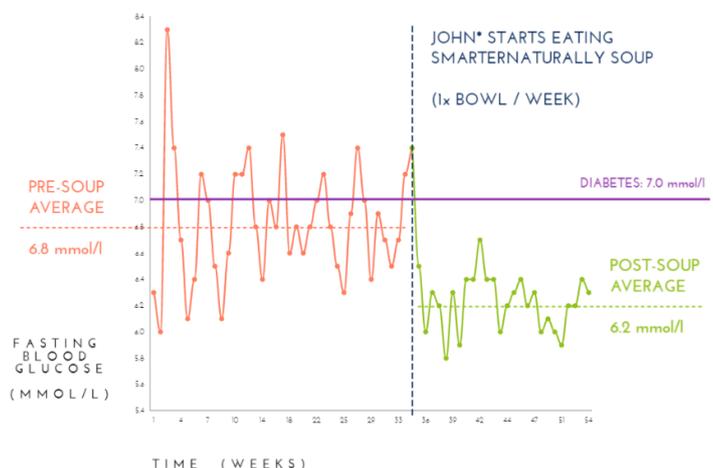
The best news is that the company has now started receiving case studies. Here is one of them:

John* (84) spent his life teaching music and raising his two loving sons. Despite staying in good shape, he was diagnosed with diabetes last year... but since he’s been eating SmarterNaturally Soup, he’s seen a big fall in his blood sugar levels, and he’s feeling healthier than ever!

“I became prediabetic about 12 years ago. I wanted to stay healthy as I got older, so I started taking my own fasting blood glucose readings twice a week (in the morning before breakfast) using a home testing machine, which allowed me to keep a close eye on my diabetic health and see how it was changing over time. For years my wife and I successfully managed my prediabetes by eating a careful diet, often cooking special low-carb recipes designed to help keep my blood sugar under control. We also stuck to the old Royal Marines maxim - no carbohydrates after midday!

Our strict diet worked for over a decade, but a couple of years ago my blood sugar readings started creeping up. The hospital was clearly worried about me, because a nurse came out to visit me during lockdown (armored up in full PPE!) in order to take my blood and check my blood sugar level. Despite my efforts, my blood sugar readings kept rising, and I was officially diagnosed with diabetes in September 2021. I already had age-related macular degeneration (AMD), and so was quite concerned about developing any other eye conditions (like diabetic retinopathy) which could further affect my eyesight. But the hospital told me that I couldn’t be prescribed the usual treatment for diabetes (metformin) as I was only just diabetic - and so taking the drug might actually make my blood sugar too low. I’m also not overweight, so losing weight wasn’t the answer either. I wasn’t sure what to do next to bring my blood sugar levels down to be honest!

Then my wife read about SmarterNaturally Soup in The Times. It seemed like a good idea, and so we decided we’d give it a go. Quite soon after we started on the soup, I noticed quite a big improvement in my blood sugar readings. I was very surprised actually, to tell you the truth! Before I started eating the soup, my fasting blood sugar reading was often in the diabetic range, around 7 mmol/l - I even had one reading that was as high as 8.3! But since I started eating the soup once a week, my fasting blood sugar has gone down by around a whole number - I’m now getting readings of around 6 mmol/l in the morning. I’ve even had readings down as low as 5.8 recently! It’s a real improvement, and I think it’s all because of this soup. I’ve felt the effects too - I’ve lost a little bit of weight, and I definitely don’t feel as tired in the mornings as I used to. I used to feel like I needed a snooze mid-morning, but that doesn’t happen so much anymore. I’ve got an extra spring in my step - my wife says I have more energy than she does now!”





ConnexinTX.co.uk

Connexin Investment History

Date	Amount	Share Price	Type
Apr 2019	£66,325	£7.00	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£1.42m	£7.00	4.7%

Description of Business

There are over 60 million glaucoma cases globally and up to 40% of the patients will be severely visually impaired in one eye. Existing drugs can slow the disease progression, but are not protective. There are no drugs in development with any demonstrated ability to protect retinal cells and prevent vision loss in patients with glaucoma. Connexin Therapeutics is developing novel drugs to protect vision and prevent blindness.

In glaucoma, increased intraocular pressure causes cell death, which by “Bystander Effect” causes death of the neighbouring cells, so cell death proliferates, which leads to vision loss. By blocking the correct connexins (an ion channel) in the retina, it is possible to block the Bystander Effect and preserve vision. Connexin 36 (Cx36) is a protein found in the retina. By blocking Cx36, the Bystander Effect is prevented, thereby preserving neighbouring retinal cells and preserving vision in glaucoma. It is known that there are some molecules that have some effect but safer, more specific Cx36 inhibitors are needed. Connexin Therapeutics wants to create patentable drug candidates which are highly selective for Cx36. The international team will create, screen, and test Cx36 inhibitors to find novel, patentable compounds. Within 24 months from investment, it will hopefully have enough data to start filing provisional patents on compounds.

This should interest pharmaceutical partners and/or the investment community. Roche has stated, “In Glaucoma we are particularly interested in therapies that have demonstrated the ability to protect retinal neurons compared to intraocular pressure lowering therapies.” and Bayer has stated, “[We] are focused on identifying innovative partnering opportunities for retinal disorders to help improve or prevent loss of vision”.

Progress since investment

The research programme has started and the first experiments are complete. The new compounds are based on a molecule which has already demonstrated efficacy in mouse models of glaucoma. They are being synthesized and tested as novel small molecules in animal models of glaucoma. Chemical modification enhances specificity, makes administration and delivery easier, and will allow Connexin Tx to get composition of matter patents.

Working with Cambridge-based o2h Discovery, Connexin Tx designed and tested three novel derivatives of meclofenamic acid. Some blocked gap junctions in a dose-dependent manner and others didn't, so Connexin learned a great deal about the structural requirements for blocking retinal connexins. This helps direct further chemical development work. Covid slowed work down, but it has all restarted.

Recent Developments

Connexin is focusing on fundraising to take the next major step. In the meantime Scientific founder Stewart Bloomfield has found additional evidence of function of Connexin 36 and also of Connexins 43 and 45. With Connexin 43 regulating corneal health and Connexin 45 primarily dealing with conditions where blood flow is reduced or cut off such as diabetic retinopathy.

The latest results indicate that Connexin not only prevents deterioration of retinal conditions, it can allow the retina and the optic nerve to restore some of their lost functionality.



Cytoswim.com

Company Valuation	Valuation Share Price	Fund Holding
£1.81m	£6.18	19.8%

Cytoswim Investment History

Date	Amount	Share Price	Type
Apr 2019	£100,274	£2.44	SEIS
Sep 2021	£11,489	£6.18	SEIS
Sep 2021	£59,038	£6.18	EIS
Apr 2022	£34,194	£6.18	EIS

Description of Business

In vitro fertilisation (IVF) is a large and growing market for humans and animals. One of the key steps in IVF is the selection of healthy sperm cells, characterised by swimming fast and straight. Cytoswim has developed a new, easy-to-use chip which separates the healthy cells from the unhealthy ones.

The current techniques for selecting healthy cells are not particularly effective. The most commonly used process is centrifugation, which takes up to an hour, requires expertise and causes damage to sperm DNA. The current preparation techniques cost the patient from £100 to £300. In Europe, there are 800,000 IVF procedures per year and in Japan and the US combined roughly 650,000. Territories such as China and India do not report IVF cycles with the same accuracy, but are estimated to carry out an additional 1,000,000 IVF cycles in total. Altogether the global accessible market is approximately £250m-£500m.

There is also a large market in animal husbandry and breeding. There are problems in animal fertilisation from cattle to laboratory mice, and famously pandas. One attraction of the animal market is that it does not generally require any regulatory approval and could therefore be much quicker to make revenue.

Progress since Investment

Work at Sheffield University testing the prototype devices with sub-standard human sperm showed the DNA fragmentation index (an indicator of unhealthy sperm and future miscarriage) was 10x lower for samples that had been through the Cytoswim devices than other separation techniques.

The company moved all the prototyping work into its own lab in the Warwick University Venture Centre and continues to use labs in the Warwick University Physics Department only for biological work. In April 22, Cytoswim accepted a £250,000 investment from Logixx Pharma to fund the next stage of certification, accelerate USA deployment and continue collaborations with industry partners. OT(S)EIS invested a further £34,000 at the same time.

The device will not be able to be used commercially for human fertilisation until a CE mark is obtained. It had been hoped that this would be in Q4 2022, but, as so often happens, the regulatory bodies move at a snail's pace. Over 1100 devices for the testing batch were manufactured and certification experiments that include chemical safety, sterility and shelf life, and sperm toxicology were due to start in Q3 2022. But Cytoswim heard that its file won't even be looked at until after Christmas. Very disappointing, but, alas, not unexpected. We have been here before.

Recent Developments

Q4 was quite quiet.



Nikalyte.com

Company Valuation	Valuation Share Price	Fund Holding
£0.77m	£0.95	24.5%

Nikalyte Investment History

Date	Amount	Share Price	Type
Aug 2019	£49,738	£0.95	SEIS
Feb 2020	£16,152	£0.95	SEIS
Oct 2020	£77,886	£0.95	EIS
Dec 2021	£44,987	£0.95	EIS

Description of Business

Nikalyte was founded by Dr Alistair Kean, Dave Mason and Srinivasa Saranu who have spent years working in the specialised coatings industry, particularly in methods for producing metal nanoparticles. They provided the IP for a company, Mantis Deposition Ltd, which developed a range of instruments for producing nanoparticles and laying these down on a substrate. But although this company was a technical success, its instruments were expensive (many >£200,000) and mostly one-off designs for particular applications, and the company ultimately failed. The objective of Nikalyte is to develop a nanoparticle generator, which will be less than £100,000 and enable researchers to produce nanoparticles of almost any metal or alloy on almost any substrate via a user-friendly interface.

Metal nanoparticles are being ever more widely used, in a growing number of applications, including cancer therapies/diagnostics, catalysis, metamaterials, photonics, electrochemistry and batteries. Nanoparticles are of huge interest to the life science research community in areas such as cell binding and drug delivery. Presently there is no clean, non-chemical method of depositing pure, non-agglomerated nanoparticles onto a substrate such as an agar plate.

Progress since Investment

The first benchtop nanoparticle system, known as the NL50, became operational in Q2 2020. A demonstration of the machine in action can be seen at shorturl.at/qsHRT.

Nikalyte has expanded its product portfolio to include the NL-UHV nanoparticle source, and also has the capability to build custom systems based on Nikalyte's proprietary technology.

Nikalyte also operates its own fully functional nanoparticle deposition system. By changing the operating parameters of the instrument, primarily the voltages and currents used, it is possible to change and measure the mean particle size and the shape of the nanoparticle size distribution curve. Nikalyte uses this machine to provide consultancy and samples of nanoparticles on suitable substrates. In partnership with Wasatch Photonics, it is now also producing state of the art SERS substrates, which can be purchased directly from the company's website: nikalyte.com

Recent Developments

In Q3, Nikalyte completed the sale of its first NL50 benchtop system to York University, where the unit is now being utilized by both researchers and physics undergraduates. Nikalyte will soon commission a second NL-UHV instrument at Oxford University, where the nanoparticle source will play a central role in an exciting new Royce Institute-funded green hydrogen research facility. Nikalyte is currently building a bespoke system that will be delivered to a blue-chip FTSE customer in early 2023. Q3 also saw the Nikalyte team attend their first in-person national and international exhibitions in Manchester and Germany, and a further exhibition in Boston is planned for November. The team is busy following up on leads generated at the events and has recruited a new salesperson to help drive equipment sales. The order pipeline for SERS continues to grow, with SEO efforts to make their substrates appear high in online rankings clearly paying off. Several SERS customers have presented exciting results from the SERS substrates this summer at international conferences.



Etcembly.com

Company Valuation	Valuation Share Price	Fund Holding
£20.13m	£6.00	7.3%

Etcembly Investment History

Date	Amount	Share Price	Type
Jan 2020	£70,588	£0.40	SEIS
Nov 2020	£20,587	£1.58	SEIS
Nov 2020	£49,411	£1.58	EIS
Feb 2021	£17,677	£1.58	EIS
Apr 2022	£42,444	£3.00	EIS

Description of Business

The immune system is very complex and has long been an inspiration for pharmaceutical development. Curing diseases using biologic agents derived from components of the immune system has saved countless lives and is a multi-billion dollar success story.

Etcembly is a true 21st Century drug discovery company. They use informatics from their machine learning platform EMLy to understand and exploit the immune system by observing the TCR (T Cell Receptor) repertoire as it responds to health and disease. It is these differences in the immune systems which may explain why people react so differently to viral infection and cancer. Some people throw off the infection and develop immunity with no symptoms at all; others die

Just as computers are now able to play chess better than humans, so Etcembly aims to bring its machine learning platform, EMLy, (Etcembly Machine Learning) to bear on the immune system. Etcembly has created a massive database of TCR sequences (in order of hundreds millions) and they use machine learning to understand the rules of target engagement and specificity.

Through exploiting this they will bring significant benefit in healthcare by shorter drug development life cycles, lower drug development costs and potentially a new class of TCR based biomarkers which will define immunological health.

Progress since Investment

Etcembly got off to an excellent start and signed a £50k contract with National Cancer Centre Singapore (NCCS)/Tessa therapeutics in Singapore who had completed a phase 3 trial evaluating chemotherapy and T cell immunotherapy for advanced nasopharyngeal carcinoma patients. Larger contracts (~£500k) based around neo-antigen trials and another start-up in stealth mode have also been signed. The database of TCRs within Etcembly had increased to more than 400m sequences by the end of Q4 2020.

Etcembly set out to raise up to £500,000 in Q4 2020, at £1.58 per share, but ended up by accepting just over £1.6m with the investment completing in Q1 2021.

Recent Developments

Etcembly continues to make excellent progress. Staff have now increased from 2 at the start to 14. The Neo-Antigen personalised cancer vaccine trial is progressing well, the first cancer patient dosage is imminent, and the Etcembly-designed vaccines have been prepared for four patients. Etcembly can now design TCRs in silico and make those same TCRs in its labs. It has two programs, one designing TCRs from scratch to specific HLA/target combinations and the second modifying existing TCRs to improve their affinity and specificity.



FlareBright.com

FlareBright Investment History			
Date	Amount	Share Price	Type
Sep 2020	£29,000	£100.00	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£2.30m	£100.00	1.3%

Description of Business

FlareBright is developing systems to enable drones to fly safely even if they lose radio contact with their controller or lose GPS signal. A drone which loses contact at the moment could fly out of control and crash, which is hampering obtaining full regulatory approval, particularly in Beyond Visual Line of Sight operations. This system is being extended to Advanced Air Mobility (Air Taxis) as it saves weight compared to the nearest competing system, and every kg of weight saving is critical for increased endurance and safety.

FlareBright is implementing its system (machine learning developed software which can be augmented with a 50 gram box of sensor electronics if these don't already exist on other drones). Although an initial gliding nanodrone was developed by FlareBright from scratch, the business model is to implement FlareBright's software on other drones and Air Taxis.

The founders of FlareBright are Kelvin Hamilton, Conrad Rider and Chris Daniels, all seasoned technical entrepreneurs.

Progress since investment:

FlareBright has now won 6 defence contracts worth £1.8m together as well as 4 UKRI grants to develop its systems, and has been working hard on delivering these contracts. Staff numbers have increased from 3 to 15. Flare Bright is becoming a recognised "go to" name in the defence and UAV sector and is now regularly asked to speak at conferences and has a decent amount of name recognition within the industry.

Recent developments:

FlareBright has successfully completed two UKRI Future Flight grants and is now commencing the next phase of these projects. Flare Bright also formally closed out its 2nd MOD Defence and Security Accelerator contract to deliver a proof of concept of its GPS-free capability in an external "Commercial off the Shelf" drone. A follow-up MOD contract has now been rolled into a different MOD Test & Evaluation trial at Radnor Range in Wales, worth almost £500k in total.

Simultaneously, FlareBright has completed an initial US Department of Defence contract and, with that success, has moved immediately onto a follow-up contract. It is highly unusual for a small UK company without a US presence or US employees to win a contract of this nature.

FlareBright has successfully gained a place on the Connected Places Catapult Future of Air Mobility Accelerator and will be paid to run trials in wind measurement at Heathrow Airport and engage with Hyundai's Supernal Air Taxi with some modelling tasks. It is also part of Oxford Said Business School's Creative Destruction Lab, and from this and the aforementioned accelerator is benefiting from a wide range of corporate support. FlareBright announced its patented wind measurement technology at the International Council of the Aeronautical Sciences' main academic conference in Sweden in September.



Cryologyx.com

Cryologyx Investment History			
Date	Amount	Share Price	Type
Mar 2021	£75,000	£3.34	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.86m	£3.34	8.7%

Description of Business

Prof. Matt Gibson’s group at Warwick University is a cross-disciplinary group that works on glycosciences and biomaterials. In particular, they have been studying the freezing and thawing of biological materials. Having discovered a material that improves the ability of cells to survive freezing and thawing, Cryologyx was created. Tom Congdon who worked in this group, did an ICURe programme which involves a lot of interaction with industry and helped focus their plan. He is joined by an experienced Chairman, Paul Garman.

Cells are normally frozen using a material called DMSO, which stops big ice crystals from forming and destroying cells, but which is also toxic to cells in the concentrations required. By using the Cryologyx materials, it is possible to reduce the concentration of DMSO used to levels which are not toxic to cells. This opens up many opportunities.

One of the pharma industry problems Cryologyx is addressing is that of having to re-culture cells after freezing before being able to use them in experiments. This typically takes up to three days. With Cryologyx technology it is possible to prepare the cells for experiments, typically in Multi Well Plates, then freeze them. At this point they can be shipped, stored almost indefinitely at - 80 degrees and then taken out of the freezer and be ready to use within a few hours - with no additional culturing required.

Cryologyx is running an Innovate UK project to develop ready-to-use liver cells in multiwell plates for toxicity testing. The work is going very well with recovery yields of over 100% being achieved. This means that 24 hours after thawing there are more viable cells than were present before freezing. This is possible because cells can divide during the 24 hours. By comparison conventional techniques and materials would yield less than 10% recovery.

The company is also working on the cryopreservation of blood and tissues in a project funded by a partner in the defence sector.

Recent Developments

Cryologyx is now producing assay-ready cell lines aimed at Virologists called PlaqueReady. These are purchasable through the company's online store. So far, it has been able to secure one repeat customer. Based on feedback and meeting with other potential customers, Cryologyx will soon be launching the next version of the PlaqueReady product with a new cell line, which will have a broader market appeal. In collaboration with the University of Warwick, Cryologyx has also optimised the cryopreservation of liver cells (hepatocytes) in a plated format highly relevant for modern drug discovery. In tests, these cells perform identically to conventionally prepared cells but have a shelf life of months instead of hours, as they can be stored frozen. Cryologyx will begin promoting this cell line to early adopters in 2023, with a full product launch soon after. The company will be pursuing product sales and partnership agreements with suppliers and will then aim to secure funding to increase sales and production capability.

Cryologyx has also completed the DASA Emerging Innovations project with all milestones successfully achieved, demonstrating proof of principle for a rapid-deployment frozen blood bank for defence application. This proof of principle will be developed with the MOD to produce a system that will save lives on the battlefield. The company has submitted a follow-on bid to develop a functional prototype for the MOD, which was accepted subject to contract in December, with a value of £350k.



Zayndu.com

Company Valuation	Valuation Share Price	Fund Holding
£5.77m	£0.30	14.8%

Zayndu Investment History

Date	Amount	Share Price	Type
Mar 2021	£133,505	£0.062*	EIS
Apr 2022	£83,029	£0.158*	EIS
Sep 2022	£51,548	£0.30	EIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Description of Business

Agricultural seeds are very expensive - some more than £100,000/kg. It is important that the highest possible yield is achieved. One of the steps in preparing them for sale is to sterilise the seeds, so no bacteria or fungi can damage their growth prospects. Most agricultural seeds were treated with chemicals, but due to their damaging nature they have been banned. Zayndu has developed a method of sterilising seeds using a plasma generated in a chamber which does no damage at all to the environment or the seeds. It also is a faster and easier process with no drying or washing steps required. For some types of seeds, for example basil or chia which have seed coats that swell immediately on contact with water, dry disinfection is the only possibility. Furthermore, the treatment actually results in a higher % of the seeds germinating and germinating in a tighter time window, which translates to higher yield.

The founders of Zayndu are Ralph Weir and Dr Felipe Iza. The technology was developed at Loughborough University, which is also a shareholder in the business. In Q3 22, Andrew Neil who had previously been in charge of a 150 strong engineering team at Jaguar Landrover joined and the engineering function has since become much more robust.

Zayndu has attracted much interest from large vertical farms, and particularly from the US where the culture is more open to trying new ideas. The purpose of the investment which also secured the release of a £700,000 Innovate Loan, was to enable the company to produce the first commercial version of its technology and to make the first sales to seed companies. The business model will be a pay per use or monthly rental model.

Recent Developments

On balance, Zayndu made good progress during the quarter and just before Christmas, three machines were installed for ‘paid-for’ three-month trials at vertical farms in the US, including the largest vertical farm company in the world. In early January, an order for a fourth ‘paid-for’ trial was received from another vertical farm in the US. However, while the smaller ‘Z10’ machine works perfectly, some vertical farms wanted a bigger one because the volume of seeds they treat is so large. So, in one case in particular, instead of supplying a Z10, Zayndu provided a bigger Z25 machine without thoroughly testing this first (the customer wanted a machine ASAP). In hindsight, this was a mistake since, for reasons that are not yet understood, the bigger machine did not work as well and was unable to produce the concentrations of plasma required. The solution will be to supply more Z10s instead of Z25 until the technical issues are resolved.

Meanwhile, the ongoing practical research in the lab is steadily building a database of which particular treatments are needed for which particular seeds. It transpires that different seeds require different treatments to obtain the best results. This will all form part of Zayndu’s IP, and this knowledge will be built into the operating protocol of the machine.





HydregenOxford.com

Hydregen Investment History

Date	Amount	Share Price	Type
Mar 2021	£100,005	£15.00	EIS

Company Valuation	Valuation Share Price	Fund Holding
£2.38m	£16.43	4.6%

Description of Business

One of the most common reactions in organic chemistry is hydrogenation which represents 14% of all organic chemistry reactions. 20% of drugs, for example, have chiral alcohol groups in them which are frequently created by hydrogenation of aldehydes or ketones. To date, there were two main methods of hydrogenation: high temperature catalysis using metals - which had disadvantages of non specific reactions, high energy use and expense of the metals, and enzymatic biocatalysis typically using glucose as the fuel to drive the reaction - which has the downside of large amounts of waste and not being suited to flow reactors. Hydregen has developed a third method, which consists of combining separate enzymes on a carbon particle, and using gaseous hydrogen as the source of hydrogen and energy so that at the end of the reaction there is no waste to dispose of. The Hydregen method is fast, clean and accurate. Furthermore it is easy to integrate into flow chemistry and should scale very well from lab to large scale.

The three key people in Hydregen are CEO Holly Reeve, scientific founder Kylie Vincent and Sarah Cleary, with the support of experienced chairman Will Barton.

Hydregen was set up with £200k in funding of which half came from OTSEIS, to support an Innovate grant to help develop and market test small flow reactors packed with their proprietary enzyme beads to which customers will be able to add their enzyme of choice and their reagents.

Recent developments

Hydregen has been working successfully on improving the yield and durability of the enzymes used in its hydrogenation platform.

The team is growing and has added more business development capability as well as new lab team members.

There has been major technical progress on the first partnered programme. We can't say who or what but it's good and big, a hundred of thousands of tonnes a year product.

There is not a great deal to add this quarter other than that the internal and external projects are progressing well. The company has hired three new scientists and is hitting its objectives.



Machine-Discovery.com

MD Investment History			
Date	Amount	Share Price	Type
Mar 2021	£74,999	£4.77	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£3.82m	£5.00	2.1%

Description of Business

Machine Discovery (MD) is an ambitious early-stage software company developing machine learning technology to simplify, automate and accelerate simulation tasks. The company is a spin-out from the University of Oxford. Its founders are highly regarded in their respective fields. Prof. Gianluca Gregori, Prof. Sam Vinko, Dr. Muhammad Kasim, and Dr. Brett Larder are experts in laser and plasma physics and ML. They co-invented the concepts behind the company’s software technology during their academic research at the University. As an example, the team was able to predict how the smoke from the fires in Australia would disperse over the Pacific over the next fortnight. They reached the same conclusions as NASA using the same publicly available datasets with 99.9% accuracy but achieved the result with 1 billionth of computing power.

In Q1 2020, Bijan Kiani, an executive who has spent over 30 years in the enterprise software and simulation business and runs Oxford Technology’s office in San Francisco, joined Machine Discovery as CEO. Bijan previously led the product marketing team at Synopsys, an industry-leading Electronic Design Automation (“EDA”) software company, and previously founded and successfully exited his electronics design start-up in which Oxford Technology had invested. Several large investors have become involved in Machine Discovery and the initial capital raised was £1.6m. But because OTM initiated the investment, and introduced Bijan, etc, all our £75,000 was an SEIS investment. The company had already secured its first trial contracts with several groups working on Fusion technology.

Progress since Investment

Following the initial investment, MD hired additional research, software development, and business expertise as part of its expansion plan. As a result, the company has grown to more than 12 employees. It won its first contract in Clean Energy (Fusion) with additional customers in subsequent quarters.

Recent Developments

Good progress continues to be made. Machine Discovery has been operating in stealth mode until October 2022. In Q4 2022 successfully launched its website, and more exciting customer adoption news is in the pipeline to be announced. The usage of the Discovery Platform is growing at its first customer installation in the clean energy space. Today over 10 engineers are actively using the platform. The usage of the Discovery Platform is also growing at another new customer site in Menlo Park, California. Additionally, after extensive evaluations in Q4 2022, the company successfully closed a new sales contract with a clean energy customer. During the last 12 months, the company has engaged with a large semiconductor company as a teaching partner to expand its offering into semiconductor design applications. Stay tuned for more important updates in this space.



OxVent.org

Company Valuation	Valuation Share Price	Fund Holding
£1.45m	£0.002	11.6%

OxVent Investment History

Date	Amount	Share Price	Type
Apr 2021	£79,124	£0.002	SEIS
Apr 2022	£60,000	£0.002	EIS
Jul 2022	£28,314	£0.002	EIS

Description of Business

OxVent was created to exploit the ventilator designs developed at the beginning of the Covid crisis by Kings College and Oxford. It was founded by Profs Mark Thompson, Federico Formenti, Sebastien Ourselin, Andrew Farmery together with CEO Peter Phillips. The UK govt placed an order for 3,000 ventilators and agreed to purchase the parts. In the event the order was cancelled, but the purchased parts were given to Oxvent and are now in the new OxVent factory near Oxford, piled up to the ceiling. It would take about 3 hours to assemble each one and it is believed that they will command a price of £2000 to £2500 each - so £6-7 million if all of them were sold.

To accelerate the commercial side of the Company, Oxvent has recently closed a contract with The Ventilator Partnership in Boston and acquired all rights to its AIRA ventilator. It is a more sophisticated device with a higher price-point and a wider range of features than the Oxvent device. Development for production is under way at OxVent. Importantly, it already has Emergency Use Authorisation from the FDA which means it can be sold in a number of countries with minimal additional regulatory barriers. A Letter of Intent is in place with a distributor who supplies a number of countries in North Africa and the Middle East so that sales will be able to start as soon manufacturing is under way at OxVent and all the paperwork has been completed. Serious interest has also been received from Brazil and other Latin American countries. AIRA is demonstrating its appeal and will be the first commercially launched product from OxVent.

OxVent has been certified to the ISO 13485 quality standard for design, manufacture and distribution of ventilators and this qualification allows the AIRA ventilator to be manufactured by OxVent in compliance with FDA requirements.

The OxVent was designed at breakneck speed in Spring 2020 but in the following months the academics at Oxford, having thought more about ventilators, have since come up with what is believed to be an altogether better and simpler design, the OxVent P: Patents are in application and the potential for licensing to other manufacturers as well as in house exploitation is very real.

Recent Developments

The company focuses on developing OxVent P, which has the greatest differentiation relative to other existing ventilators. It has a very elegant, simple construction without large moving parts and can be used with both the main control strategies, namely pressure control and volume control. The low cost and robustness inherent in the design will make it very suited for widespread adoption.

Former CEO Peter Philips has moved on, and the company is currently being run on a shoestring by Azad Hussain, with very good support from the founding institutions.



OxCan.org

Company Valuation	Valuation Share Price	Fund Holding
£16.56m	£102.96	1.7%

Date	Amount	Share Price	Type
Jun 2021	£50,000	£40.00	SEIS
Jul 2021	£50,000	£40.00	EIS
Jul 2022	£28,314	£102.96	EIS

Description of Business

A company founded by Peter Liu and Andreas Halner, two Oxford DPhil researchers with medical training. They have developed machine learning algorithms to detect early stage lung cancer with 85% sensitivity and specificity over 99%. They are focusing on recurrent lung cancer as the first niche. Lung cancer is usually detected quite late and while it is often curable by surgery in stage 1, once it has reached stage 3 or 4 the prognosis is much worse.

When we first met them they had recently completed a study comparing the performance of their algorithms with those published by John Hopkins University. With the same specificity they were able to detect double the number of early (stage 1) lung cancers. The test is based on a liquid biopsy, where a blood sample is taken and genetic, protein and epigenetic information is collected.

We participated in a £1.2m investment round led by Chinese lab robotics company MegaRobo.

Progress since Investment

Since our investment, OxCan has rapidly scaled to a team of 12, adding expertise in Machine Learning, Liquid Biopsy, Business Development, and Regulatory Affairs. They have also taken on three employees via the Government Kickstart scheme, helping to get disadvantaged young people into work during these challenging times.

Recent Updates

OxCan has raised \$3.7m, which allows them to push ahead in all aspects of the business. OxCan moved into a new space at the Oxford BioEscalator and was busy installing their mass spec to accelerate their development. The team has built further collaborations - probably due to how much value they can extract from the samples they receive (and probably also due to the infectious energy the team projects). In their latest pitch deck, they point to a doubling of the sensitivity of their test relative to the current next best - picking up over 90% of grade 1 lung cancers.

Summary

OxCan is doing well, the team is growing, and they continue developing their partnerships.



MitoRxTherapeutics.com

Company Valuation	Valuation Share Price	Fund Holding
TBD*	TBD*	TBD*

Date	Amount	Share Price	Type
Nov 2021	£60,000	£75.00	SEIS
Nov 2021	£12,450	£75.00	EIS
Jan 2022	£9,750	£75.00	EIS
Dec 2022	£112,920	TBD*	EIS

*Share Price and Company Valuation will be confirmed after the current fundraising finishes (expected 31.03.2023). Previous shares will be also split. SEIS/EIS certificates remain valid.

Description of Business

When bacteria developed in the early earth, several billion years ago, there was no oxygen in the atmosphere and bacteria developed using chemistry based on sulphur. Later, when cells developed, they hijacked the sulphur-based energy-producing bacteria and incorporated this into the mitochondria, the part of all our cells where energy is produced to drive all the thousands of processes which go on inside cells. Sulphur is still required for the mitochondria to work, and if anything goes wrong with the sulphur-based chemistry, then the cells cannot function properly. MitoRx believes that this is the fundamental cause of many diseases, and that by fixing this fundamental problem, lasting cures can be found.

MitoRx was founded by Prof Matt Whiteman (CSO), Jon Rees (CEO), Norman Law (CTO / Head of IP). Oxford technology invested £75,000

The list of diseases which may be treated by targeted sulphide delivery (it has worked in nematode and mouse models) is very long, including inflammatory diseases, genetic diseases and neurodegenerative diseases. The initial focus will be on Duchenes Muscular Dystrophy (DMD) and Huntington's disease, but it could also help in Alzheimer's disease, Parkinson's disease, sarcopenia, cancer cachexia, COPD, and IPF.

Progress since Investment

MitoRx completed its seed round investment in late April 2022. It announced that Glyn Edwards MBE has joined as chairman of the company. The science has been going well so far and there has already been interest in the company and its programmes from both pharma and investors.

Recent Developments

The work at MitoRx is progressing well, and an ongoing fundraising has had excellent internal response (OTSEIS participated) and there has also been very good interest from external investors.

On the research side there has been lots of progress on many fronts. In the muscular dystrophy (DMD) program it has been encouraging to see the potential medicine restoring not only the H2S levels but also restoring movement and cell bioenergetics in general.



OVO BIOMANUFACTURING

OVOBiomufacturing.com

Company Valuation	Valuation Share Price	Fund Holding
£1.30m	£10.99	7.0%

OVO Investment History

Date	Amount	Share Price	Type
Nov 2021	£90,799	£10.99	SEIS

Description of Business

When viruses replicate, they create lots of imperfect copies of themselves. (It is this quality of viruses that enable them to mutate and create variants). Vaccines are manufactured using viruses which have been engineered to include the genetic code of the vaccine, so that when the viruses replicate they produce the vaccine. However as well as copies of the vaccine, the viruses also produce variants which in turn go on to reproduce. So after a number of generations the mixture will contain all sorts of other material as well as the desired vaccine. As well as particles with minor deficiencies, the vaccines also produce much smaller particles maybe with only 20% of the mass of the original vaccine. But if these smaller particles, known as DIPs (Defective Interfering Particles) also have the correct starting and ending codons, they will also take over the replication mechanism of the cell and replicate. As they are much shorter, they will replicate faster than the original virus. In this case, after a few generations, the mixture will be composed almost entirely of DIPs because of their much shorter reproduction time. OVO Biomufacturing is a spin-out from Warwick and Coventry University aiming to control/exploit DIP production. There are two strands to OVO's technology:

1. Vaccine Optimisation Platform: Manufacturers of virus-based vaccines culture the vaccine in eggs. The vaccine enters the cells in the eggs and there takes over the reproduction mechanism, so that each infected cell then produces 1000's of copies of the vaccine. But manufacturing efficiency may be hampered by the production of DIPs at the same time. OVO's software platform can estimate what will happen to the rate of future vaccine production given the mix of Vaccine and the various DIPs at an early stage of the production process. The aim here is to maximise the output of vaccine. OVO believes that it can approximately halve the annual \$1bn cost of vaccine production.
2. Novel Antiviral Therapies: OVO aims to create therapeutics using DIPs to outcompete and inhibit the reproduction of the real virus.

Progress since Investment

On the Vaccine Platform side, OVO felt that they could provide some form of benefit for vaccine manufacturers at the technology's initial stage of development. OVO is beginning to get early-stage traction within the industry. Currently, OVO has now started an exploratory study with one major influenza vaccine manufacturer and are currently in the process of finalising the contracts with a second major manufacturer. On the antiviral side, OVO secured and started an Innovate UK biomedical catalyst grant for development of its therapeutic platform. This will allow OVO to increase headcount and increase the speed of development.

Recent Developments

OVO is in the process of raising a seed round to finalise development of the vaccine technology. It hopes that this will be the final round of investment required to finish development of the technology and reach a point of self-sustaining revenue and significant profit. Development of the technology is also progressing. OVO is continuing to refine the technology and is generating positive data. The company is also in the process of writing and filing two patents. On the antiviral side, further in vitro tests are demonstrating promising reductions in virus concentration and the company is continuing to increase the reductions through optimisation. Testing is also expanding to a broader range of viruses in the respiratory virus field. The company is also investigating optimal dosing concentrations in the virus discussed and is currently exploring routes to generate a delivery vehicle that can be used for in vivo testing.



Digilab.co.uk

Company Valuation	Valuation Share Price	Fund Holding
£6.12m	£0.51	9.6%

digiLab Investment History

Date	Amount	Share Price	Type
Dec 2021	£75,000	£0.075*	SEIS
Aug 2022	£75,001	£0.51	EIS

*Adjusted for 1000:1 share split. EIS certificates remain valid.

Description of Business

digiLab is a spinout building on the work of Prof Tim Dodwell (CTO), who leads the Data Centric Engineering Group at Exeter University and holds a prestigious Turing AI Fellowship. Heading up the company as CEO is one of Prof Dodwell’s former PhD students, Anhad Sandhu; supporting them on the board are two experienced directors in Paul Garman (Chairman) and Dan Hatfield, both of whom we know from Cryologyx. OT helped to seed digiLab with a 75k investment.

Many companies generate lots of data about their systems, but don’t know what to do with it. Companies in sectors with difficult operating environments also suffer from highly variable data quality, with the result that existing ML/AI solutions would suffer from the “Garbage In, Garbage Out” phenomenon. digilab is harnessing these big, but variable quality, data sets to improve decision intelligence. Their algorithmic models can learn from the time series data produced by real world sensors, in order to build a virtual system; this virtual system can then predict what those sensors will say in the future, or even what they would say if certain conditions were to occur.

Progress since Investment

digiLab have been working with the UK Atomic Energy Authority, Jacobs Engineering, and South West Water, as well as other unnamed clients. Delivering on the above contracts should validate their industry-agnostic approach.

One of digiLab’s key tasks has been to figure out how to distill their academic knowledge into scalable, widely deployable software tools. The company has identified the need for three core, interoperable modules: a data cleaning tool, an emulator tool to accelerate existing simulators, and an easy-to-use intelligence tool on the front-end, for controlling workflows and understanding data.

Recent Developments

digiLab raised £900k and have signed deals within the industries listed above and a few not listed above. In total over £500k. Excellent results for the young company that is growing quickly and is bringing in both more seasoned veterans and lots of younger talent. There are now 15 people on the payroll. Dan Hatfield has now joined as Chief Operating Officer. Alan Prior has joined as Chairman. Alan was the second employees at ABAQUS, a simulation company later acquired by Dassault Systems, where he worked for a further 16 years. It continues to be an excellent start to the company that attracted (our) Will Denby to join them full time.



Neuroute.co

Neuroute Investment History

Date	Amount	Share Price	Type
Jan 2022	£55,813	£1.89	SEIS
Jan 2022	£24,185	£1.89	EIS

Company Valuation	Valuation Share Price	Fund Holding
£3.21m	£1.89	2.5%

Description of the business

Neuroute (formerly Neucruit) provides software to accelerate clinical trial recruitment and planning, by aggregating real-time data from over 25 million health-related conversations initiated online everyday. This helps sponsors and investigators pick the best trial locations, optimise their recruitment process, and access hard-to-reach demographics.

Founder Livia Ng introduced the company with the following question: “Could you imagine being locked down for 12 years?” That’s how long it takes, on average, for a life-changing therapy to reach vulnerable patients. Clinical trials take up the majority of those 12 years, and over 86% of them are delayed by at least 6 months, costing the pharmaceutical industry more than \$500bn a year. Finding the right patients in the right places is tough. Our hope with Neuroute is for synergies across the portfolio: many of our companies have been hit by difficulties and delays with trials.

For instance, Neuroute can virtualise the screening process by using chatbots to select which patients are eligible. By providing a patient registry that fulfils a study’s eligibility criteria, the platform has reduced some RCTs’ enrolment timelines by ~90%.

Progress since Investment

Neuroute has closed 14 contracts (13 companies and 1 CRO) in 2022, 60% of which are medical devices, 15% digital therapeutics and 25% traditional therapeutics. Revenues has grown to more than £180k, with contract values increased from £5k to £70k.

After rebranding to Neuroute to reflect a more ambitious strategy, the company has started building a full platform for trial design, including screening, randomisation and data management. This will enable health tech SMEs to deploy fewer clinical operation staff, without relying on huge outsourcing contracts. The platform now uses automated feasibility calculation for all diseases and all countries to enable a faster service delivery.

Neuroute has now adopted a concurrent product development strategy: by working closely with their customers, they get to build and optimise their solution in a loop that decreases development timelines while reducing costs. They created a value bible to systematise feedback and deliver customer-driven product development.



Theraport Investment History

Date	Amount	Share Price	Type
Aug 2022	£10,004	£7.41	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.08m	£7.41	11.9%

Description of the business

Theraport was set up by Anne Thomas, Travis Prescod and Anna Huhn, all still currently studying at Oxford. The founders are developing methods to increase and improve the loading of drugs into exosomes, vesicles and other small hollow targeted drug carriers.

Exosomes are one of the ways in which cells in the body communicate with each other. Proteins or other payloads are wrapped up in small bits of lipid bilayer with appropriate receptors and ligands on their surface so they are taken up by the right cells.

The possibility of directing more of a drug to the cells that need it by using exosomes is being developed, but one of the bottlenecks is the consistent and sufficient filling of the exosomes.

Although we can't say how Theraport achieves this, the first proof of concept experiments show positive results.

Theraport have won an Innovate grant to help them further develop their technology.

Recent Developments

Theraport has moved into the BioEscalator in Oxford and is continuing work to expand the range of drugs that can be loaded into exosomes.



Scintam Investment History			
Date	Amount	Share Price	Type
Oct 2022	£100,002	£7.00	SEIS

Company Valuation	Valuation Share Price	Fund Holding
£0.90m	£7.00	11.1%

Description of the business

When expensive mechanical machinery has been in service for many years, often in hostile environments such as seawater or steam, it is often necessary to do repairs and maintenance and, in many cases, to replace certain parts. Often the original fixings, frequently bolts or nuts, will have become corroded so severely that they cannot be removed by conventional means. Another example is jet engines which require inspection and maintenance after 8,000 hours of flight. By effectively dissolving metallic fasteners, Scintam eliminates the need for drilling, grinding and heating processes that are hazardous for the operator and the component.

Scintam was founded by three young engineers who developed a spark erosion machine designed especially for this task. The Scintam machine has a hand-held 'erosion head, which may be fitted with a head that fits snugly over the particular bolt/fixing to be removed. The operator can set the precise depth to which the erosion is to happen and can then squeeze a trigger to carry out the process.

In the case of an aircraft engine, Scintam believe that using their device will reduce the time taken to separate an engine from its casing from 30 hours to 2. That would result in a saving of about £1.96m over the lifetime of the engine.

The initial target markets will be aerospace, wind turbines, remanufacturing, and nuclear decommissioning.

The company filed patents on August 22. The original research was done at the University of Nottingham, sponsored by Rolls Royce, who are aware of the need.

Recent Developments

Scintam is in the final stages of commercial development with multiple paid pilot studies completed, and is due to launch in the aerospace maintenance market in Q2 2023.

Q4 was a busy time for R&D and customer trials, with the first product line really being put through its paces. Scintam completed 3 paid pilot studies across aerospace and remanufacturing, with follow-on projects quoted or confirmed. The first patent has been published, awaiting a 'notification of intention to grant' from the IP Office. Scintam was delighted to be awarded an Innovate UK SMART grant beginning on 1 Jan 2023. This is an 18-month project with total project costs of £456,650 (70% funded) to develop the next product line, which will be targeted at the automotive industry for high-throughput, automated remanufacturing.

Investee companies no longer in the portfolio

Name of Company	Description of Business	Date of initial investment	Initial investment	Follow-on investment	Total investment	Date of closure	Net loss after tax relief (1)
Message Missile	Mobile phone app	May 2013	£16,000	£25,000	£41,000	Jan 2016	£12,300
Ibexis	Remote data loggers	May 2013	£50,000		£50,000	Feb 2017	£21,000
Abgentis	Improved antibiotics	March 2014	£42,000		£42,000	July 2019	£12,600 (2)
Power OLEDs	Improved OLED Technology	December 2013	£75,000	£178,397	£253,397	Dec 2020	£97,427 (2)

(1) Assuming 40% taxpayer and ignoring any reliefs on capital gains tax which will have applied to investors with capital gains tax to pay.

(2) Investors in Abgentis and Power OLEDs have received emails about how they can claim loss relief.

OT(S)EIS Fund Portfolio

31st December 2022

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Run 3D 	3D Gait Analysis for Physiotherapy	£100,000	18/12/2012	SEIS	£50,000	£300,000	6.00	Latest Share Price
		£15,000	18/10/2013	SEIS	£7,500	£45,000	6.00	
		£10,000	18/10/2013	Non SEIS/EIS	£10,000	£30,000	3.00	
		£3,000	10/11/2017	EIS	£2,100	£4,500	2.14	
		£10,206	29/03/2019	EIS	£7,100	£10,200	1.43	
BioMoti 	Improved Cancer Drugs	£74,998	08/01/2013	SEIS	£37,500	£183,800	4.90	Latest Share Price
		£40,000	28/05/2014	EIS	£28,000	£98,000	3.50	
		£74,661	31/03/2021	EIS	£52,300	£74,700	1.43	
Combat Medical 	Bladder Cancer Treatment	£74,999	02/04/2013	SEIS	£37,500	£196,300	5.23	Latest Share Price
		£74,998	05/12/2013	EIS	£52,500	£178,400	3.40	
		£10,002	29/10/2014	EIS	£7,000	£22,700	3.24	
		£34,271	05/12/2014	EIS	£24,000	£77,700	3.24	
		£74,998	10/03/2016	EIS	£52,500	£60,000	1.14	
		£64,995	12/10/2016	EIS	£45,500	£65,000	1.43	
		£129,212	30/03/2017	EIS	£90,400	£103,400	1.14	
		£27,058	12/03/2018	EIS	£18,900	£21,600	1.14	
		£54,223	26/03/2021	EIS	£38,000	£54,200	1.43	
£21,218	01/04/2022	EIS	£14,900	£21,200	1.43			
Message Missile 	Mobile App Geo- location Notifications	£16,000	23/05/2013	SEIS	£8,000	£3,200	0.40	Discounted to £0
		£5,000	18/10/2013	SEIS	£2,500	£1,000	0.40	
		£20,000	19/06/2014	SEIS	£10,000	£4,000	0.40	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Ibexis Technologies	 Remote Datalogging	£50,000	24/05/2013	EIS	£35,000	£14,000	0.40	Discounted to £0
Lightpoint Medical	 Real-time Imaging for Cancer Surgery	£74,999	04/06/2013	SEIS	£37,500	£1,250,100	33.34	Latest Share Price
		£75,000	10/03/2014	EIS	£52,500	£310,900	5.92	
		£9,991	07/11/2014	EIS	£7,000	£33,300	4.76	
		£124,895	04/12/2014	EIS	£87,400	£416,400	4.76	
		£100,000	10/03/2016	EIS	£70,000	£155,900	2.23	
		£20,000	24/03/2016	EIS	£14,000	£31,200	2.23	
		£26,941	27/03/2019	EIS	£18,900	£32,700	1.73	
£38,825	25/03/2020	EIS	£27,200	£47,100	1.73			
Metal Powder & Process	 High Quality Metal Powder Production	£150,000	16/08/2013	SEIS	£75,000	£150,000	2.00	Latest Share Price
Power OLEDs	 Improved OLED Technology	£75,000	11/12/2013	SEIS	£37,500	£15,000	0.40	Discounted to £0
		£25,000	18/07/2014	EIS	£17,500	£7,000	0.40	
		£30,000	27/04/2015	EIS	£21,000	£8,400	0.40	
		£30,000	04/09/2015	EIS	£21,000	£8,400	0.40	
		£60,065	05/04/2017	EIS	£42,000	£16,800	0.40	
		£33,332	08/03/2018	EIS	£23,300	£9,300	0.40	
Abgentis	 Improved Antibiotics	£42,191	27/03/2014	SEIS	£21,100	£8,400	0.40	Discounted to £0

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Designer Carbon Materials	 Endohedral Fullerene Production	£75,000	03/04/2014	SEIS	£37,500	£125,000	3.33	Latest Share Price
Sasets	 Software for Construction Industry	£75,000	30/07/2014	SEIS	£37,500	£37,500	1.00	Latest Share Price
		£75,000	22/01/2016	EIS	£52,500	£30,600	0.58	
Sime Clinical AI	 Rapid Diagnostic to Protect Pre-term Baby Lungs	£75,000	04/09/2014	SEIS	£37,500	£297,200	7.92	Latest Share Price
		£100,000	07/04/2016	EIS	£70,000	£355,700	5.08	
		£25,040	12/11/2018	EIS	£17,500	£41,900	2.39	
Expend	 Software to Reduce Paperwork for Expenses	£75,000	23/12/2014	SEIS	£37,500	£2,250,000	60.00	Latest Share Price
		£17,338	09/02/2017	EIS	£12,100	£42,800	3.53	
		£3,000	04/12/2017	EIS	£2,100	£2,800	1.34	
		£13,000	28/08/2018	EIS	£9,100	£19,500	2.14	
		£30,719	29/03/2019	EIS	£21,500	£46,100	2.14	
		£29,300	25/03/2020	EIS	£20,500	£44,000	2.14	
Molecular Warehouse	 Proteins for Diagnostics and Therapeutics	£75,000	21/04/2015	SEIS	£37,500	£22,500	0.60	Latest Share Price
		£75,000	02/02/2016	EIS	£52,500	£26,600	0.51	
		£20,000	24/03/2016	EIS	£14,000	£7,100	0.51	
		£52,005	14/09/2016	EIS	£36,400	£17,800	0.49	
		£20,000	22/09/2017	EIS	£14,000	£6,200	0.44	
Animal Dynamics	 Mechanical Engineering inspired by Animal Motion	£75,000	29/06/2015	SEIS	£37,500	£113,800	3.03	Latest Share Price
		£35,220	27/11/2017	EIS	£24,700	£39,100	1.59	
		£3,001	30/07/2018	EIS	£2,100	£1,500	0.75	
		£14,391	30/03/2020	EIS	£10,100	£7,600	0.75	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Ducentis Biotherapeutics	 Immune Modulation Therapeutics	£50,000	13/07/2015	SEIS	£25,000	£559,100	22.36	Proceeds From Sale & Fair Future Milestones**
		£30,000	14/12/2015	SEIS	£15,000	£299,700	19.98	
		£160,275	30/03/2017	EIS	£112,200	£730,100	6.51	
		£45,314	29/03/2018	EIS	£31,700	£189,200	5.96	
		£53,820	13/03/2019	EIS	£37,700	£155,700	4.13	
Bioarchitech	 Engineered Oncolytic Virus	£79,560	13/08/2015	SEIS	£39,800	£795,600	20.00	Latest Share Price
		£40,000	08/03/2016	SEIS	£20,000	£240,000	12.00	
		£16,200	07/07/2017	EIS	£11,300	£97,200	8.57	
		£29,000	12/10/2017	EIS	£20,300	£145,000	7.14	
		£89,674	29/03/2019	EIS	£62,800	£298,900	4.76	
		£4,637	19/12/2019	EIS	£3,200	£9,900	3.06	
		£36,758	25/03/2020	EIS	£25,700	£78,800	3.06	
Orbit Discovery	 Peptide Drug Development	£100,000	27/11/2015	SEIS	£50,000	£111,200	2.22	Latest Share Price
		£38,245	07/07/2017	EIS	£26,800	£38,200	1.43	
Curileum Discovery	 Intestinal Tract Therapies	£75,000	07/03/2016	SEIS	£37,500	£476,200	12.70	Latest Share Price
		£25,950	19/05/2016	SEIS	£13,000	£164,800	12.70	
		£20,000	15/07/2016	SEIS	£10,000	£127,000	12.70	
		£20,000	16/07/2016	EIS	£14,000	£127,000	9.07	
		£19,997	28/10/2016	EIS	£14,000	£258,000	18.43	
		£20,002	08/11/2016	EIS	£14,000	£258,000	18.43	
		£30,000	11/05/2017	EIS	£21,000	£387,100	18.43	
		£102,020	27/03/2019	EIS	£71,400	£1,316,400	18.43	
		£4,330	29/03/2019	EIS	£3,000	£55,900	18.43	
		£13,791	25/03/2020	EIS	£9,700	£55,200	5.71	
£29,656	19/12/2022	EIS	£20,800	£29,700	1.43			

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

**Note: Valuation of Ducentis investments is based on the proceeds from sales (after the exit) and the fair value of future milestones (approx. 10% of the max potential milestones)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation	
Spendology		Online Financial Interface	£37,500	01/04/2016	SEIS	£18,800	£13,100	0.70	Latest Share Price
			£62,500	20/10/2016	EIS	£43,800	£26,900	0.61	
			£25,000	13/09/2017	EIS	£17,500	£10,800	0.61	
Active Needle Technology		Ultrasound Visible Needles	£50,000	05/04/2016	SEIS	£25,000	£218,100	8.72	Latest Share Price
			£65,000	23/08/2016	EIS	£45,500	£181,400	3.99	
			£19,000	07/03/2017	EIS	£13,300	£53,000	3.99	
			£30,000	29/03/2017	EIS	£21,000	£83,700	3.99	
			£28,000	02/01/2018	EIS	£19,600	£58,200	2.97	
			£101,781	18/03/2019	EIS	£71,200	£157,000	2.20	
			£32,122	25/03/2020	EIS	£22,500	£49,600	2.20	
£55,653	24/03/2021	EIS	£39,000	£71,600	1.84				
Oxford Nanoimaging		Super-resolution Microscopes	£100,000	29/04/2016	SEIS	£50,000	£1,050,000	21.00	Latest Share Price
Entia		Portable Blood Analyser	£75,000	19/05/2016	SEIS	£37,500	£180,800	4.82	Latest Share Price
			£9,504	21/10/2016	EIS	£6,700	£22,900	3.44	
			£48,554	30/11/2017	EIS	£34,000	£78,800	2.32	
			£89,934	01/02/2019	EIS	£63,000	£100,800	1.60	
			£26,017	24/03/2021	EIS	£18,200	£26,000	1.43	
Covatic		Personalised Media Feed	£39,776	02/02/2017	SEIS	£19,900	£89,500	4.50	Latest Share Price
			£60,224	06/02/2017	EIS	£42,200	£135,500	3.21	
			£30,000	05/02/2018	EIS	£21,000	£33,800	1.61	
			£67,997	31/03/2021	EIS	£47,600	£130,100	2.73	
			£37,926	01/04/2022	EIS	£26,500	£37,900	1.43	

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For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation	
Electrowinning Technologies		Electrical Metals Capture	£25,000	06/02/2017	SEIS	£12,500	£11,000	0.88	Latest Share Price
			£35,000	29/09/2017	SEIS	£17,500	£8,700	0.50	
Lupe Technology		Better Vacuum Cleaner	£51,000	20/02/2017	SEIS	£25,500	£337,500	13.24	Latest Share Price
			£30,000	22/02/2017	EIS	£21,000	£198,500	9.45	
			£51,000	12/03/2018	EIS	£35,700	£153,000	4.29	
			£37,001	12/03/2018	EIS	£25,900	£111,000	4.29	
			£9,999	27/03/2018	EIS	£7,000	£30,000	4.29	
			£138,719	25/03/2020	EIS	£97,100	£224,500	2.31	
			£50,243	12/03/2021	EIS	£35,200	£64,600	1.84	
£27,864	01/04/2022	EIS	£19,500	£27,900	1.43				
Process Vision		Gas Inspection Optics	£99,999	27/03/2017	SEIS	£50,000	£166,700	3.33	Latest Share Price
			£3,000	28/06/2018	EIS	£2,100	£5,000	2.38	
			£68,494	31/03/2021	EIS	£47,900	£171,200	3.57	
Gripable		Mobile Rehab Technologies	£49,999	15/09/2017	SEIS	£25,000	£120,300	4.81	Latest Share Price
			£106,934	27/02/2019	EIS	£74,900	£138,900	1.86	
			£33,219	15/12/2020	EIS	£23,300	£33,200	1.43	
			£69,682	02/03/2022	EIS	£48,800	£69,700	1.43	
Dark Beam		Web Data Security	£50,000	06/10/2017	SEIS	£25,000	£150,000	6.00	Latest Share Price
			£25,000	05/02/2018	SEIS	£12,500	£75,000	6.00	
			£10,000	09/02/2018	SEIS	£5,000	£30,000	6.00	
			£18,200	26/03/2018	EIS	£12,700	£54,600	4.29	
			£50,000	03/09/2018	EIS	£35,000	£300,000	8.57	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
LRESytem	 Lateral Resurfacing Elbow Replacement	£50,000	12/01/2018	SEIS	£25,000	£112,600	4.51	Latest Share Price
		£75,050	21/01/2019	EIS	£52,500	£75,000	1.43	
Atelerix	 Transport of Viable Cells	£50,000	22/01/2018	SEIS	£25,000	£55,000	2.20	Latest Share Price
		£133,186	03/04/2019	EIS	£93,200	£79,600	0.85	
		£196,851	30/03/2020	EIS	£137,800	£109,600	0.80	
		£44,767	04/06/2021	EIS	£31,300	£50,400	1.61	
		£11,100	29/11/2022	EIS	£7,800	£11,100	1.43	
Refeyn	 Imaging Biomolecular Interactions	£66,240	26/06/2018	SEIS	£33,100	£840,300	25.37	Latest Share Price & Proceeds From Sale**
		£33,760	27/06/2018	EIS	£23,600	£422,500	17.88	
		£121,851	24/01/2019	EIS	£85,300	£955,900	11.21	
		£67,468	04/07/2019	EIS	£47,200	£528,600	11.19	
Cytecom	 Detection of Bacteria Viability	£100,440	31/07/2018	SEIS	£50,200	£144,500	2.88	Latest Share Price
		£55,000	27/11/2019	EIS	£38,500	£79,100	2.06	
		£84,021	04/12/2020	EIS	£58,800	£120,900	2.06	
		£53,986	31/03/2021	EIS	£37,800	£54,000	1.43	
Polycat UK	 Nanoparticle Polymer Catalysts	£50,002	05/10/2018	SEIS	£25,000	£441,300	17.65	Latest Share Price
		£22,058	29/03/2019	SEIS	£11,000	£43,300	3.92	
		£11,985	23/03/2020	SEIS	£6,000	£23,500	3.92	
		£112,998	16/12/2020	EIS	£79,100	£148,700	1.88	
		£11,784	10/02/2021	EIS	£8,200	£15,500	1.88	
		£60,350	19/04/2022	EIS	£42,200	£60,400	1.43	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

**Note: Multiple = Valuation of Refeyn investments is based on the proceeds from sales (after the partial exit) and the latest share price for the shares remaining in the portfolio

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
Asymmetric Suzuki Reactions 	Synthesising Complex Chiral Molecules	£65,040	18/03/2019	SEIS	£32,500	£48,000	1.48	Latest Share Price
Oxwash 	Hyper-sustainable Laundry	£50,000	15/03/2019	SEIS	£25,000	£295,500	11.82	Latest Share Price
		£50,000	22/03/2019	EIS	£35,000	£295,500	8.44	
		£54,679	07/11/2019	EIS	£38,300	£149,300	3.90	
		£36,069	12/05/2021	EIS	£25,200	£67,400	2.67	
The Smarter Food Company 	Foods for Pre-diabetics	£89,998	03/04/2019	SEIS	£45,000	£136,900	3.04	Latest Share Price
		£96,058	31/03/2021	EIS	£67,200	£106,700	1.59	
Connexin Therapeutics 	Glaucoma Treatment	£66,325	04/04/2019	SEIS	£33,200	£66,300	2.00	Latest Share Price
Cytoswim 	Sperm Cell Separation	£100,274	04/04/2019	SEIS	£50,100	£254,000	5.07	Latest Share Price
		£11,489	16/09/2021	SEIS	£5,700	£11,500	2.00	
		£59,038	28/09/2021	EIS	£41,300	£59,000	1.43	
		£34,194	01/04/2022	EIS	£23,900	£34,200	1.43	
Nikalyte 	Nanoparticle Generators	£49,738	06/08/2019	SEIS	£24,900	£49,700	2.00	Latest Share Price
		£16,152	24/02/2020	SEIS	£8,100	£16,200	2.00	
		£77,886	16/10/2020	EIS	£54,500	£77,900	1.43	
		£44,987	29/11/2021	EIS	£31,500	£45,000	1.43	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation	
Etcembly		Immune pattern recognition system	£70,588	21/01/2020	SEIS	£35,300	£1,058,800	30.00	Latest Share Price
			£20,587	16/11/2020	SEIS	£10,300	£78,200	7.59	
			£49,411	18/11/2020	EIS	£34,600	£187,600	5.43	
			£17,677	23/02/2021	EIS	£12,400	£67,100	5.43	
			£42,444	19/04/2022	EIS	£29,700	£84,900	2.86	
Flare Bright		Autonomous drones	£29,000	28/09/2020	SEIS	£14,500	£29,000	2.00	Latest Share Price
CryoLogyx		Cell cryopreservation	£75,000	12/03/2021	SEIS	£37,500	£75,000	2.00	Latest Share Price
Zayndu		Seed treatment	£133,505	26/03/2021	EIS	£93,500	£646,200	6.91	Latest Share Price
			£83,029	01/04/2022	EIS	£58,100	£158,100	2.72	
			£51,548	01/09/2022	EIS	£36,083	£51,500	1.43	
Machine Discovery		Simulation Optimisation	£74,999	31/03/2021	SEIS	£37,500	£78,600	2.10	Latest Share Price
Hydregen		Biocatalysis	£100,005	31/03/2021	EIS	£70,000	£109,500	1.56	Latest Share Price
Oxvent		Low cost ventilator	£79,124	01/04/2021	SEIS	£39,600	£79,100	2.00	Latest Share Price
			£60,000	27/05/2022	EIS	£42,000	£60,000	1.43	

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.

Company	Business	Amount Invested	Date	SEIS/EIS	Net Cost	Fair Value	Multiple*	Method of Valuation
OxCan 	Early cancer detection	£50,000	29/06/2021	SEIS	£25,000	£128,700	5.15	Latest Share Price
		£50,000	02/07/2021	EIS	£35,000	£128,700	3.68	
		£28,314	27/07/2021	EIS	£19,820	£28,300	1.43	
MitoRx Therapeutics 	Therapeutics targeting Mitochondria	£60,000	16/11/2021	SEIS	£30,000	£60,000**	2.00**	Latest Share Price
		£12,450	18/11/2021	Non SEIS/EIS	£12,500	£12,500**	1.00**	
		£9,750	24/01/2022	EIS	£6,800	£9,800**	1.43**	
		£101,820	17/11/2022	EIS	£71,300	£101,820	1.43	
		£11,100	29/11/2022	EIS	£7,800	£7,800	1.43	
OVO BioManufacturing 	Improving vaccine manufacturing and antivirals	£90,799	19/11/2021	SEIS	£45,400	£90,800	2.00	Latest Share Price
digiLab Solutions 	Next-generation machine learning	£75,000	13/12/2021	SEIS	£37,500	£510,000	13.60	Latest Share Price
		£75,000	04/08/2022	EIS	£52,500	£75,000	1.43	
Neuroute 	Making clinical trials easier	£55,813	26/01/2022	SEIS	£27,900	£55,800	2.00	Latest Share Price
		£24,185	02/02/2022	EIS	£16,900	£24,200	1.43	
Theraport 	Exosome Loading Technology	£10,004	15/08/2022	SEIS	£5,002	£10,004	2.00	Latest Share Price
Theraport 	Spark erosion tooling	£100,002	07/10/2022	SEIS	£50,001	£100,002	2.00	Latest Share Price

**Note: Fair Values and Multiples of the older MitoRx investments will be updated after the share price following the ongoing fundraising is confirmed. The values will be higher.

*Note: Multiple = Fair Value/Net Cost, where Net Cost takes into account only the tax relief against income tax and Fair Value includes loss relief where applicable (and assumes a 40% taxpayer)

For those investors who also have capital gains tax to pay, there are further CGT reliefs (SEIS) or CGT deferrals (EIS) available.