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technology

# **Oxford Technology Combined SEIS and EIS Fund -OT(S)EIS-**

*Quarterly Report to 31 March 2013*

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## **1. Summary**

By 31 March 2013, OT(S)EIS had raised just over £1.3m and had completed two investments as shown below. Several further investments have been agreed one of which is expected to complete before the end of the tax year. However, following the announcement in the budget, SEIS investments which are made in the 2013/14 tax year can be treated, for tax purposes as if they had been made in 2012/13. This is very good news for SEIS investors and it means that OT(S)EIS does not need to rush to complete investments before 5 April; it can take a little more time.

The objective of the fund is to invest approximately 1/3 of the amount invested by any investor in SEIS qualifying investments within 12 months of the investment in the fund. We believe that we will meet this objective. The other 2/3 of the investment will then be invested in EIS investments, 1/3 from months 12-24 and 1/3 from months 24-36, and it is expected that most of these investments will be to support earlier SEIS investments which are showing promise.

The fund will remain open for investment and the same objectives will apply, so that investors who wish to make further SEIS and EIS investments may invest further in the fund.

## 2. Portfolio

<i>Name of Company</i>	<i>Amount invested (£)</i>	<i>Date</i>	<i>SEIS/EIS</i>	<i>Net Cost (£)</i>	<i>Fair Value (£)</i>	<i>Multiple</i>
Run3D	100,000	18/12/12	SEIS	50,000	100,000	2
BioMoti	75,000	08/01/13	SEIS	37,500	75,000	2

Notes:

1. Advance SEIS approval has been received from HMRC for both of these investments. Full SEIS status is obtained only after 70% of capital invested is spent.
2. Net Cost - This shows the net cost to an investor in the fund who has UK income tax to pay. His/her income bill is reduced by 50% of the cost of the investment. For those investors with Capital Gains tax to pay, the cost is reduced still further
3. Fair value – This is the value of the investment as of today's date using BVCA guidelines.

## 3. Possible Future Investments

The following investments have been agreed and we expect to complete them soon:

### 1. Improved Antibiotic

The issue of increasing antibiotic resistance of bacteria is well known, yet few of the large pharmaceutical companies have invested in the development of new antibiotics. The situation is so bad that the US government is putting in place incentives such as extension of patent life for antibiotics to encourage companies to work in the area.

Developing new antibiotics has proved very difficult in the past and combinatorial chemistry and high throughput screening in particular have not delivered the necessary results.

Led by a very experienced pharmaceutical chemist, who has already delivered 3 successful drug developments to the market, the company is taking an existing antibiotic and modifying it to increase its potency, overcome the problems of antibiotic resistance and reduce the side effects of the drug.

OT(S)EIS will invest £75k in two tranches, the first following demonstration of increased potency and demonstrated efficacy against bacterial strains resistant against the parent antibiotic. The second tranche will be invested once in vivo efficacy has been demonstrated. The second investment will be used to demonstrate the bioavailability, pharmacokinetics and lack of toxicity of the modified compound. This package of work will be completed within one year and, if successful, the company will have a package which it believes will be worth roughly £20m (looking at the comparative sale value of similar packages).

At that point the company and the investors will have a choice of continuing the development or selling the asset. Sale of the asset will be the default position at that stage.

This investment is an unusual pharma investment as the amount of money required is well defined: there is one set of experiments only. Either the experiments will be successful, or they will not - there is no optimisation phase within the programme. We will only invest once the first phase of experimentation has been completed.

As we are looking at the modification of an existing drug we believe that the likelihood of failure of the drug in the second and third phase of testing is significantly lower than the uplift in value of the assets upon successful completion.

#### *Update 31 March*

There have been difficulties with the science programme, with the result that it has not yet been possible to conduct the experiment to show increased potency. The investment will be made only if this increased potency is demonstrated. Therefore this investment has not been made; it is hoped that the experiment will be conducted in the quarter to 30 June, and if it is successful, then the investment will be made.

## **2. Combat Medical - Improved Treatment for Bladder Cancer**

This business is already operating in Spain and the plan is that OT(S)EIS invests £75,000 as part of a £150,000 SEIS investment to start the business in the UK. The treatment involves heating a chemotherapy liquid and circulating this through the bladder, rather than cutting out tumours in the bladder which is the current treatment. The existing treatment results in a 78% recurrence of tumours which then require increasingly drastic surgery. The company's treatment, which still involves surgery, but hopefully only once, results in a recurrence rate of less than 20%. It is also much less expensive, since the repeated surgery required to treat bladder cancer is extremely expensive. So the hope is that the new treatment will in time become the standard treatment in the UK. If so then the company will become very profitable and valuable.



This investment is fully agreed and indeed £75,000 from SEIS co-investors went into the company in early March. By agreement with all concerned, OT(S)EIS will complete its investment by 5 April.

The company has already received several strong expressions of interest from potential distributors wishing to take the product on.

## **3. Pharmaceutical products to enable the improved delivery of active agents**

A very strong academic team has made a number of pharmaceutical developments aimed at delivering various drug payloads to different sites in the body. It has developed a system able to deliver drugs through the blood brain barrier. There are some drugs which it is believed could have a significant impact on neural conditions but have not managed to get through the blood brain barrier. The company has already received a significant development contract from a NASDAQ quoted biotech company. It also has a technology for the delivery of drugs or gene therapy to tumours. The company will be able to target those drug companies that are struggling to find new therapeutic entities and are looking for new ways to deliver existing drugs.

#### **4. A company developing OLED materials.**

OLEDs are organic light emitting diodes. They are being used increasingly in small displays - e.g. in Samsung's new phones - and are being researched for efficient lighting and for large displays. For all the applications an increase in efficiency and in lifetime are being eagerly sought. The company has developed a number of new chemicals which can make up a portion of the OLED stack. Small scale tests have demonstrated an increase in efficiency. An increase in efficiency leads to lower production of heat. This in turn usually contributes to an increase in lifetime for the OLED and a longer battery life for the device. The company will be using the money to manufacture the material to gram scale and test it as a part of an OLED stack using the same type of equipment used for large scale manufacture. The company has signed an MOU with a chemical manufacturer for the scale up of production once the materials have been approved by the first end customer.

#### **5. New Technology for Cancer Surgery**

One quarter of breast cancer surgeries require a follow up operation to remove small pieces of tumour which were missed first time round. This is due to the surgeon not being able to visually distinguish between healthy and, often very small, pieces of tumourous tissue. The company is developing a system which will enable the surgeon to see in real time an image of remaining cancer tissue. Surgeons will also be able to verify whether the tissue they have removed has a sufficient non-cancerous border to reduce the likelihood of reoccurrence. The technique will make use of a widely used contrast agent. The company has been successful in obtaining a number of grants to help take the product through clinical trials. The first of the grants was used to carry out market research with cancer surgeons. The response was very positive indicating a clear need for the solution being offered. The company is run by the inventor who has many years of experience working in commercial and technical roles in large pharma and also has previous entrepreneurial expertise.

## **6. New Device for aiding Bandage Application**

Venous leg ulcers affect 300,000 patients in the UK. Standard treatment is graduated compression bandaging, carried out by a nurse. This costs the NHS roughly £60 per patient per week. Graduated compression bandaging is difficult and research shows that even experienced nurses using bandages with markings on them do not manage to consistently provide the required profile of pressures along the leg. This results at best in delayed healing (if the bandages are not sufficiently tight) and at worst in harm to the patient (if the bandages are too tight or the gradient inverted). The company has invented a device which allows the nurse to see in real time the pressure which is being exerted by the bandages as they are applied and to record the data. The use of the measurement device allows less expensive unmarked bandages to be used so that the price of the procedure is reduced while the nurses will be sure of having applied the bandages accurately each time.

## 4. Updates on existing investments

### Run 3D Ltd - [www.run3d.co.uk](http://www.run3d.co.uk)

Date of Initial Investment:	18 <sup>th</sup> December 2012
SEIS/EIS:	SEIS
Amount Invested:	£100,000
Shareholding, excluding options:	40%
Shareholding, after options:	36%

#### Description of business:

Run3D is the brainchild of Dr Jessica Leitch, 30, who is an International Runner herself (representing Wales), has a first class degree in Engineering from Oxford and also a DPhil from Oxford. In her academic career, she specialised in the biomechanics of running. She has numerous blues and was the Oxford Sportswoman of the Year in 2008/09.



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 then capture the image of the balls at 200 frames/sec and this data is then fed into a computer programme, originally developed by an academic in Canada and to which Run3D has exclusive UK rights for an initial period of three years. The computer 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. etc. The gait of the individual is also compared to a database of 3,000+ runners.

The operator, often a physiotherapist, is then able to indicate:

1. Where the runner's gait is furthest removed from the norm.
2. Where, if uncorrected, future injuries are likely to arise
3. How the runner should aim to modify their gait to avoid future injuries
4. What particular exercises should be undertaken to strengthen particular muscles in order to reduce the likelihood of future injury.

There are now 2m people who run every week in the UK and the statistics show that 1m of these will develop running related injuries in the course of the next 12 months.

### *Recent update*

Run3D has had a very successful first quarter. In particular it has achieved the following:

1. It has opened the first Run3D Clinic in Oxford based at the Iffley Road running track, - where Roger Bannister became the first person to run a mile in under four minutes. There it has a treadmill, the cameras and the software and runners are able to visit to have a gait analysis.
2. In mid-March Andrea Bachland joined the company as the physiotherapist. For legal reasons, some of the advice of a medical nature can only be given by a qualified physiotherapist, so it is essential, that the company has such a person. Andrea has previously worked in the clinic in Canada where the software used by Run3D was developed, so she is ideally qualified.
3. At the beginning of March, Run3D had a stand at the Triathlon Show in Sandown Park. There was a treadmill on the stand and runners were able to pre-book (as a special show price) to have a basic Run3D Gait analysis. This proved to be a great success, and runners were processed at the rate of approximately 1 every 20 minutes; one runner was prepared while the one before was on the treadmill, and the one before that was having the consultation about the analysis. Each runner left with a Run3D memory stick containing their analysis.
4. Perhaps of the greatest significance for the business Run3D has agreed the first franchise deal. This is with a long-established running clinic in London. Before Oxford Technology became involved, it had been agreed that this clinic would purchase the software. However, following negotiations it was agreed that instead, the owner of the clinic would invest the £20,000, which he would have used to buy the system, as an SEIS investment in Run3D Ltd on the same terms as OT(S)EIS. OT(S)EIS invested £100,000, so there was capacity for a further £50,000 of SEIS. This investment was completed at the end of March. The software and cameras have been purchased and will be installed in mid-April. Broadly, the revenue earned will then be shared between Run3D and the clinic. The split will be 50/50 for the first analyses in each year, but this will slowly increase by stages to 80/20 in favour of the operator as numbers rise.

### *Summary*

Run 3D has made an excellent start.



## **BioMoti** - *www.biomoti.com*

Date of Initial Investment:	8 <sup>th</sup> January 2013
SEIS/EIS:	SEIS
Amount Invested:	£75,000
Shareholding:	10%

OT(S)EIS has invested £75,000 as part of a £150,000 SEIS investment in BioMoti which is a spin-out from Queen Mary College London. Its founders are Dr. Davidson Ateh and Prof. Jo Martin who has recently been appointed as Head of Pathology for the NHS. The chairman is Keith Powell who has long experience in early stage biotechnology companies.



Solid cancer cells including ovarian cancers overexpress a particular ligand called CD95L on their surface. CD95L causes certain classes of immune cells to shut down their activity and helps protect cancer cells against the immune system. The scientists have discovered that if a small particle is coated with CD95 (which binds to CD95L) the cancer cell will engulf the particle and draw it inside. By loading a chemotherapeutic drug into a coated biodegradable bead coated with the receptor molecule, it is possible to deliver high concentrations of chemotherapy drug into the cancer cells. The first product uses paclitaxel to target ovarian cancer. The overall result is that when injected into the patient, the beads bind preferentially to ovarian cancer cells, whereupon the bead enters the cell where, over a period of days the chemotherapy agent is slowly released, killing the cells. Other beads which have not bound to an ovarian cancer cell are excreted by normal processes without having released very much of the toxic chemotherapy agent.

This approach can dramatically increase the efficacy of the standard clinical treatment whilst reducing side-effects in healthy tissues. This is no longer an idea. 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 animal model when the technology is applied and compared with the current clinical standard-of-care. The company has won a TSB Biomedical Catalyst grant to carry on the work, which indicates that the

TSB rates this approach and the £150,000 SEIS investment is to provide matched funding for this grant.

The business plan is to develop the technology and to prepare for clinical trials, ideally to start in maybe one year's time. Further funding will be required for this, but the plan will be to obtain some of this from a pharma companies, to whom the treatment will ultimately be licensed. It is also likely that further support will be forthcoming from the TSB and other grant sources. OT(S)EIS will be able to participate in this further funding.

### *Update*

BioMoti has moved into new premises where it will be able to carry out the lab work which is part of its TSB grant. This will include the manufacture of the CD95 proteins used to target the oncojan particles. It has new pharmacokinetics results which are in line with expectations. BioMoti has restarted an interaction with a large pharma company which had originally tested their technology, but had then undergone a restructuring during which it had dropped its interest. A visit to the BioEurope conference has yielded a large number of leads which are being followed up.

Restarting the interaction with the large pharma company has been valuable and the company is getting on well with the task of developing its products, its approach to the market and its manufacturing processes.