NEWSLETTER-MAY 2007

biotechnology yes
young entrepreneurs scheme

Rothamsted Research—Controlling Slugs

Scientists from Rothamsted Research were named as the best budding biotechnology entrepreneurs after winning the 2006 final.

Rothamsted team: Dan Godfrey, Neryssa Glithero, Ben Webster and Stephen Pearce

The young Rothamsted scientists walked away with £1,000, sponsored places at the BioIndustry Association Gala Dinner and the opportunity, provided by UK Trade and Industry, to give a presentation at a prestigious US business plan competition at Rice University in Texas.

The team won after impressing judges with their hypothetical business plan for a company called Phytofend and its revolutionary product SlugFast, a genetically modified Hosta plant proven to be a highly effective means of slug control. Hosta is naturally attractive to slugs and the SlugFast variety was transformed to express a novel appetite suppressing protein, the plant attracts slugs and, upon ingestion, causes them to stop feeding.

Dr Peter Ringrose, Chairman of BBSRC and head of the judging panel, said: "*The Rothamsted Research team showed an excellent grasp of the principles of finance, marketing and intellectual property rights needed to be a success should they ever decide to enter the world of commercial biotech. Biotechnology YES has been running for over a decade and the quality of entries continues to climb. Together with the rest of the judging panel I have been hugely impressed by all of this year's finalists and the careful preparation that clearly went into every team's business plan.*"

Dr Mark Edwards, Senior Director of Science Policy, Global Research and Development at Pfizer, which sponsored the prize for Innovation, said: "*Biotechnology YES showcases the next generation of scientists who are going to preserve the future of clinical and academic R&D in the UK. Success in business requires an understanding of the complete package that includes innovation, intellectual property and the workings of the market and YES gives this to participants.*"

Stephen Pearce, Managing Director of the winning team, said: "*YES was certainly demanding, but ultimately extremely rewarding. We gained a great deal of knowledge regarding the business aspects behind the work we do as part of our PhDs as well as giving us food for thought regarding a future career in this area. The opportunities offered by this competition are outstanding and we would highly recommend the experience to any researcher with an interest in the biotechnology industry.*"

New YES Website Launched

This month sees the unveiling of our new website (www.biotechnologyyes.co.uk) to launch the 12th Biotechnology YES competition. The site gives a key insight into how the competition is organised; when the workshops take place; why postgraduate bioscientists should participate; and what budding entrepreneurs need to do to enter a team.

To date, over 1,500 have participated in YES and this year our aim is to engage with more entrants then ever before. This will be made possible by the development of a North West competition in collaboration with NWDA, AstraZeneca, UMIC and partners; the continuation of Bioscience YES funded for the 5th year by Yorkshire Forward; and the expansion of Environment YES (see overleaf).

The 2007 Competition will also see the inclusion of India YES, with the UK Trade and Investment and the Foreign Commonwealth Office sponsoring four teams of Indian researchers to participate.

This newsletter, incorporating reviews from past participants, is designed to stimulate your interest in being involved, whether it be as a participant, speaker, mentor, judge or sponsor.

bbsrc biotechnology and biological sciences research council
Nottingham University Business School
investing in creativity UNIEI
MRC Medical Research Council
The Royal Academy of Engineering
Yorkshire Alive with Opportunity!
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New Addition

environment yes
young entrepreneurs scheme

2006 saw a new addition to the YES competition to broaden its scope. The Natural Environment Research Council (NERC) which has previously provided sponsorship, worked with UNIEI (University of Nottingham Institute for Enterprise and Innovation) and BBSRC (Biotechnology and Biological Sciences Research Council) to set up a workshop aimed at scientists working in the sciences of the natural environment – aptly named Environment YES.

In 2006 it ran as a pilot workshop to assess the demand in this area and opens up the competition to scientists working in areas that were not previously eligible to apply but that NERC supports, such as earth, atmospheric and water sciences.

Five teams entered with a range of ideas; a catalyst for use in paints able to absorb harmful gases from the air, a novel enzyme that can prevent biofilm formation on dental hygiene products, a computer programme for predicting the weather accurately in a specific area and a novel alga used to produce biodiesel.

Richard Blackmore, Head of Knowledge Transfer at NERC was a judge at the workshop and commented "*The standard of the business plans and presentation was incredibly high. It's always exciting to see such a wide range of fantastic ideas – you genuinely believe that these could be real businesses.*"

Where there's muck there's brass
Greenswitch, a team from Cranfield University, won the first Environment YES competition; their idea was based upon the production of electricity from cow slurry.

Cranfield team: Hannah Gardner, Kevin Banks, Marco Mucino, Greg Ameyugo and Frank Noppel

Poppy Leeder, Funding Schemes Manager at NERC, chats with Frank Noppel, Managing Director of the winning team, about his and his team's experiences:

What was your winning idea?
We decided that we had devised a new form of microbial fuel cell that was very efficient at converting bio-matter into electricity. This could power lots of equipment around a farm, and reduces the amount of waste requiring specialist disposal so saving money as well as reducing pollution problems.

How did you come up with your idea?
We got the idea by talking to other students, and then identifying a technology, the microbial fuel cell, with a wide range of potential commercial applications. After having investigated some of those applications, we identified the most profitable one and turned it into a business case.

What preparation did you do beforehand?
Before we came to the workshop, we agreed on the product, company name, and responsibilities within the team. We also did some market analysis and set up a financial spreadsheet.

What did you find most difficult?
The hardest part was the product identification. Once you have decided on a product, you have to stick to it, and it becomes difficult to change it later having spent so much time on it.

And the best parts?
The venues were great, particularly the time we spent in Oxford and London. We also enjoyed the expert advice during the workshops.

How did taking part increase your understanding of commercialising science?
What I've learned is the "feeling" for starting a business. Suddenly, the terms cashflow and income make sense. I have also discovered the crucial part in a business is not the science.

What other skills do you think you have gained from taking part?
Networking - it was great meeting other people with similar interests and talking to them. The way the workshop was set up requires the management of a range of complex tasks to achieve success – a very useful skill for the future.

Any other comments for people taking part in the future?
We focussed on climate change when we participated in the competition. But Environment YES addresses all kind of business ideas related to the natural environment; so future entrants should not forget that.

Following the success of the pilot, the Competition will run again in 2007 starting with a workshop in Oxford during October. Further information can be found at www.nerc.ac.uk/environmentyes or by contacting Poppy on fvl@nerc.ac.uk.

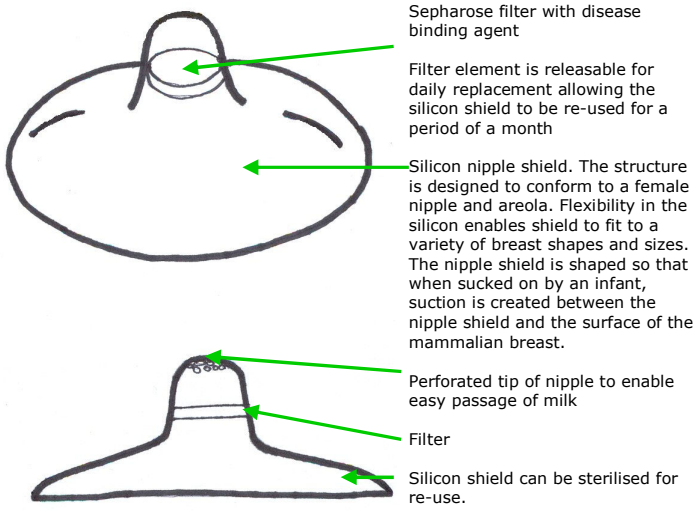
Osiris Biotechnology —Born Out of YES

Before the 2006 competition started we discussed many different options whilst trying to come up with a viable business idea. We wanted something simple yet unique. The simplest concept of all these ideas was to develop a device that could selectively filter out viral particles transmitted from mother-to-child through breastfeeding. We were certain this would have already been done but we could not find any existing information either on the internet or in scientific journals. At this point we were yet to realise the full commercial potential of the seemingly obvious idea.

Newcastle upon Tyne University team:
Beth McDonald, Daniel Bishop,
Eileen Leung and Amy Openshaw

A combination of discussions with our local Enterprise Centre beforehand and the talks by speakers and mentors at the Edinburgh workshop made us realise that we had to, and more importantly could do, something with our idea. It needed to be protected, and fast, if we were to prevent a patent being void by public disclosure. Needless to say, the next 48 hours were frantic. The advice and magnitude of information provided gave us a unique insight into the business world and more importantly the knowledge to allow our idea to progress.

Our primary device (see below) comprises: a rubber or silicone nipple shield having a base and a protrusion that is shaped to conform to a mammalian female areola and nipple, a number of protrusions in the tip of the nipple to enable easy passage of milk, and finally, a filter fitted inside the nipple to enable binding of specific viruses. The device may further be adapted and applied to machines that express milk and to feeding bottle teats permitting storage of filtered milk.



This simple method ensures that there is no impedance of flow of milk to infant, nor any essential components of breast-milk removed or destroyed, yet, viral particles can be selectively removed with an estimated >98% efficiency.

The device can potentially be adapted to selectively filter seven of the known diseases transmitted through breast-milk including, HIV, Hepatitis, West Nile Virus and Tuberculosis. A possible scientific adaptation is to prevent transmission of prescription and recreational drugs through breast milk.

We plan to develop and sell product licences for these specialist breast-milk filters to prevent transmission of disease from mother to child. These product licences will be sold to large medical device companies for integration in to existing worldwide mother-to-child-prevention programs. Our products will be distinguished from competition by the unique design and purpose, scalability and ease of modification and will be extensively patented.

The market and financial analysis indicate that with a start-up expenditure of £23,951, we can generate £280,000 from licence and product sales by end of year two (with 1% of the end-user market being obtained). Personnel costs will be less than £55,000 for the first year with fixed costs being minimal due to rental of University facilities.

It is predicted that the product will achieve 10% market penetration in a further two years, resulting in a £1.6 million intake from the first licence sold. It is our intention to continue research and development and adapt the design for alternative diseases and use resulting in production of more licences for sale.

We came away from Biotechnology YES with a completely new outlook on scientific research: a stark realisation of the potential of biotech commercialisation, an awareness of the vast support available for biotech start ups - including a simple PhD student - and the first hand knowledge that just because an idea seems obvious does not mean it has already been done!

As a result of our Biotechnology YES experience, we have won the 'Science & Technology Achievement Award', sponsored by the Centre of Excellence for Life Sciences, to gain start-up funds for our company, Osiris Biotechnology Ltd. What started as an off-the-cuff idea for an imaginary company could soon become a reality with the potential to positively affect millions of lives.

The Biotechnology YES competition could certainly not be described as easy. To say we were pleasantly shell-shocked by the experience is putting it mildly. In fact, it was the most intensive, rapid learning curve we have ever experienced and it was mentally exhausting. It was also one of the most valuable, inspirational, challenging yet enjoyable experiences we have ever taken part of.

Amy Openshaw

From PhD to Finance

When I participated at the Biotechnology YES competition in 2003, I was two years into my PhD in Biochemistry in London. I was researching the effects of over-expression of HER2, the target receptor of the breast cancer drug Herceptin, on gene activity of breast cells using microarray technology. However, even though I was really excited about my research and the science behind it, I knew that the white coat and the lab bench were not for me. At the pub one day, a friend of mine who was also doing her PhD at the Institute told me about the Biotechnology YES competition. I thought it sounded really interesting and I agreed to take part there and then. We formed our team and went off to Nottingham with our biotech start-up idea ready to learn how to prepare the business plan.

The competition was a great experience and it certainly played a big part in my decision to leave the lab. It got me thinking about what my career options were after my PhD, and it helped me realise that just because I trained and specialised in science it didn't mean that I had to stay in the lab. I did a lot of research, spoke to people I met at the competition and attended presentations and careers fairs to find out what my options were. I eventually decided to apply to the Finance Development Scheme at GSK and am now half way through the three-year scheme.

The main reason why I decided to apply to GSK was the excellent training and development package they offered. The scheme involves doing three 12-month rotations working in different parts of the company, such as R&D, Pharma or even Corporate, IT, Manufacturing or Procurement - an excellent opportunity to gain varied Finance experience in contrasting business areas. GSK also sponsors me through my CIMA studies to enable me to qualify as a Chartered Management Accountant. CIMA is a globally recognised professional qualification with an emphasis on Finance for future business decisions, a skill that is essential for any area of work in any industry so it is very transferable. This scheme was therefore perfect for me not only because of its high focus on development but also because it is open to any degree discipline with no requirement for previous Finance experience (I didn't have any!). The competitive salary and benefits package (including share options, an annual bonus and salary reviews every 6 months) were also important contributors to my decision to apply for GSK.

During my first year at GSK I worked in the IT Finance team, where I learned a lot about forecasting & budgeting, cost centre management and capital investments. I also worked with an international team on a company-wide project looking at the benefits of simplifying GSK's IT application portfolio. My second and current placement is in Consumer Healthcare. My main role in this placement is to provide financial support and analysis to the marketing managers of some of GSK's best known brands, such as NiQuitin, Aquafresh, Sensodyne and Panadol. I am responsible for preparing their monthly profit & loss accounts to keep track of product profitability as well as analysing the financial viability of new products being launched in the UK market. Next year, I am hoping for a placement in R&D or Pharma, where I will have more opportunities to get closer to the science side and be able to combine my skills and knowledge from my PhD with the new finance skills acquired over the last 2 years.

The learning curve is steep and I have had to work hard, but I am thoroughly enjoying my experience at GSK and have no regrets about my decision to leave the lab. I still love science and keep up to date with the literature: I have free access to all main journals through the GSK e-library, another advantage of working for a Pharma company! The way I see it, I haven't made a drastic career change and left all my knowledge behind. Very much on the contrary, I am gaining skills to complement my science knowledge in such a way to open new doors and give me many more opportunities than I had before to help science move forward and to contribute to a better future. Oh, and I am pretty sure my friend who told me about the Biotechnology YES competition back then would agree with all I say – she researched her own post-PhD career options and finally decided to join the same scheme last year!

For more information on the development programmes at GSK please visit:
http://www.gsk.com/careers/uk-students-graduates.htm

Mariana F. Bertani

The YES Team hope that this Newsletter will raise your interest in the Competition and encourage young researchers to take part in the 2007 event. To anyone working in the wider biotech sector who wishes to come involved please contact Tracey Hassall-Jones (tracey@biotechnologyyes.co.uk).