

Biotechnology YES: Being entrepreneurial – hard work, but it can be fun

John Peberdy

Exploiting microbes can be highly lucrative. John Peberdy describes a scheme to teach young scientists some of the necessary skills to become an entrepreneur.

PhD and post-doctoral scientists can learn how to make money out of microbes by participating in the Biotechnology Young Entrepreneur's Scheme (YES). If you are unaware of this Scheme, then you are one of a decreasing minority. It is in its seventh year and its popularity grows with 'age'. So what is Biotechnology YES? Simply it is a competition, but more importantly a learning experience, for PhD students and post-doctoral bioscientists to gain an understanding of the processes involved in the commercialization of the biosciences and biotechnology. It is of interest therefore to microbiologists from all aspects of the subject. Biotechnology YES was launched in 1996 and involves a partnership of the University of Nottingham and the BBSRC, with the support of several other sponsors.

Participants are required to develop an idea, based on real science and technology, for an imaginary business, and to show the start and development of the business through the presentation of a business plan. Working teams of four or five students are formed in schools, departments or laboratories in universities throughout the country, and there is competition for the places for 36 teams.

● Getting trained

So how is the learning experience delivered? The Scheme begins with a briefing session held several weeks in advance of the workshops where participants are advised of the initial work required before the competition starts. Three regional workshops follow at which practitioners share their knowledge and experience with the participants. Each workshop runs over 3 days during October and November. On the first day a programme of talks introduces the key issues, intellectual property rights, an understanding of the market(s) for new



technologies, strategies for technology development and commercialization, sources of and the staging of finance to achieve commercialization, the operation of biotech companies and relevant case studies of biotech enterprises at different stages of development.

The knowledge gained from these presentations provides the basis for the true YES learning experience. The serious work for the participants begins when they adjourn to their assigned syndicate rooms and start developing their plan. Help is on hand from expert mentors to see them through. The plan is very much the work of the participants as mentors often raise questions that require serious thought or suggest different approaches to a problem calling for difficult decisions to be made by the team. The learning is truly experiential! This is reflected in a comment by one of the participants in the 2002 competition – 'I still remembered it weeks later, whereas after my exams the information was lost'.

The climax of the workshop on the final day involves presentations by the participants to panels of hypothetical investors – these panels are again made up of the range of practitioners that one would meet in presentations to venture capitalists. Two winning teams emerge from each workshop and go through to a final held in London in December. At this event the overall winning team receives a prize of £1,000.

● Success stories

Whilst our mission is to provide the learning experience described in this article, it is not surprising that participation in Biotechnology YES awakens the entrepreneurial spirit in some of the participants to the extent that they go ahead and start a business. Dr Tim Hart, the Managing Director of Cybersense Systems based in Oxford, is one such example. Tim's business has a microbiological connection in that the underlying technology of the company involves the measurement

of bioluminescence emitted from soil bacteria. He is now a stalwart of the Scheme and a frequent speaker, and says of YES 'Research Institutes and Universities across the UK are simply oozing with creative, energetic young scientists and it only takes a few of these to discover their hidden talents and awaken their passion for entrepreneurship through the YES scheme'. Other companies that participants have developed are in the disease diagnostic field and in plant biotechnology. For many other participants, taking part in YES provides awareness of career opportunities outside of the lab. It is interesting to learn that many practitioners in intellectual property, venture capital, marketing, and business development have a background in the biosciences. Polly Todd of Oakland Ventures told us 'the competition not only gave me a good grounding in a variety of skills that were necessary for getting into the biotechnology business, such as an introduction to intellectual property and patents, but also the confidence to feel that I could get out there and do something myself'.

You can learn more about Biotechnology YES and see some of the ideas that past teams have presented at our website (www.biotechnologyyes.co.uk). Registration for the 2004 competition will open in April; however, expressions of interest can be sent now to tracey@biotechnologyyes.co.uk

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● Professor John Peberdy MBE was Professor of Microbial Biotechnology in the School of Life and Environmental Sciences at Nottingham University. Since 1999 he was also Director of Curriculum Development at the University of Nottingham Institute for Enterprise and Innovation (UNIEI). He is now retired and is Emeritus Professor in Residence at UNIEI.

Aviaclean – a winning formula

Microbiology Today Editor Gavin Thomas interviewed the winners of the 2002 Biotechnology YES scheme from the University of York.

The imaginary company the team created, Aviaclean, specialized in using bacteria to clean up bird waste from monuments, buildings and public spaces. The team comprised five second year PhD students in the Biology Department: Jemma Jowett, Julie Richards (JR), Graeme Park (GP), Simon Chandler (SC) and Alex Venn.

The members of the team had heard about the scheme from flyers and lab colleagues who had entered previously. They decided it would be a good chance to experience what went on in a biotechnology company.

'It looked like being fun – and will look good on our CVs!' GP

The first thing the team needed to do was to come up with an idea, which was inspired by working in York. The large bird population living on the lake results in serious deposition of guano on the campus.

'There were products on the market to kill fungi and also to clean up bird waste, and we were looking to combine the two.' JR

Once they had the idea, they chose their roles within the team, which were managing director, marketing director, R&D director, strategy director and financial director.

The team attended the briefing workshop, which proved to be very useful, and then started developing their idea for the regional workshop. They researched on the internet and spoke to existing companies, academics within the Biology Department and experts from the university involved directly in bio-enterprise. At the regional workshop they were glad they had their full complement of five team members as there were specific talks for each aspect of the company and each person could focus on their individual role. The expert help available was important in developing the product and influenced their business plan.

'What we came up with before got completely changed!' SC

Being realistic about the process was an important factor and the group found themselves scaling down their ideas to a few key products.

The competition was judged by the team's presentation on the final day and the team had done some extra preparation for this even before coming to the workshop. With money from the Biology Graduate School they paid for a short animation to be made illustrating how their products could be used in the marketplace and also designed a logo and produced company name badges. They split the 20-minute talk among the members of the team.

'The structure was that Simon started as the MD, then Jemma talked about the research, Alex talked about marketing, Julie about strategy, Graham on finance and then finally Simon to summarize.' SC

Presenting their ideas to the judges was quite daunting as they asked very difficult questions, but the team felt they had done well and were selected to go forward to the finals.

They used the time before the finals to hone their presentation and increase their background knowledge before heading down to the DTI in London to present their case to a panel of three venture capitalists and

head of BBSRC, Julia Goodfellow. The judges were very critical and uncompromising, and focused on weaknesses they thought existed in each team and how much the team really believed in their idea. However, the York students managed to hold together as a team during the questioning.

'It was quite shocking quite how nasty some of the questions were. Some totally undermined people's projects.' GP

After surviving the panel, the team was named winner and collected the trophy and prize of £1,000.

Reflecting on the scheme, they were convinced that using a microbiologically based project was important.

'I think one of the reasons we did so well with microbiology was that a lot of the teams chose to market something medical. The judges liked the simplicity of our idea and the fact that it would deliver returns in a few years rather than having to wait for clinical trials.' GP

The team was unanimous that it was a worthwhile and fun experience and has changed the way they think about bio-enterprise. They enjoyed the teamwork aspect and having the opportunity to speak to people who had actually started their own companies. Also, the fact that they did so well was a bonus.

'Winning was my favourite part of the process.' JR

TOP RIGHT: University of York – winners in 2002.

BELOW: Tim Hart awarding the best presenter prize.

