

Many minds make light: Ideas and entrepreneurship in the life sciences

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ABSTRACT

Entrepreneurship is expressed in research by willingness to embrace risky new ideas and invest time, effort and careers in them. As with entrepreneurship in commerce, scientific entrepreneurship is more likely to be successful if it is a team effort, with differing members of a team bringing new perspectives and refinements to ideas and developing them into genuine innovations that can open new fields, stimulate and inspire others, and support social goals of progress. This journal aims to encourage such genuine intellectual entrepreneurship by allowing innovators a forum to publish their ideas and so collect others to refine and develop them.

TEXT

Every now and again I am asked to give a talk or write a piece on entrepreneurship in the life sciences. A long history of working in the 'biotechnology' industry gives me experience into new, small companies, their creation and their failure, although (in common with almost all European biotech entrepreneurship) success is more elusive. Why do people want to know? I ask, and the answer is almost always about starting companies and making money. 'Entrepreneurship' is about creating commercial empires and being enormously rich, emulating darlings of the 21st century media such as Richard Branson, Bill Gates, or Larry Ellison.

The dictionary definition of entrepreneurship does not include being very rich. It is about striving to do something new, daring to step beyond convention, taking risks. In science 'entrepreneurship' strikes out along an axis orthogonal to wealth, along the value scale of intellectual achievement and innovation. To be a life science entrepreneur can mean starting company, becoming hugely rich, and parking your Bugatti in the departmental car park. But more often it means taking risks, daring all on an idea or an experiment that clearly will not work, that your colleagues think is frankly a waste of time, that, even if you do get the data, will never get published because, well, it is just wrong isn't it? Everyone known that the chromosomes are made of protein, that the nucleic acid is just a simple, repetitive chemical there probably to hold the polypeptides in place. Why is this guy Avery even bothering to look to see if DNA can transfer genetic information? He is not an entrepreneur. He is a nut-case.

There is indeed a narrow line between entrepreneurship and obsessive stupidity. UK entrepreneur Clive Sinclair famously danced across this line throughout his career, setting up the UK's first hobby electronic company and one of the first home computer enterprises, but also loosing fortunes in electronic watches and electric cars (1). This is why it is so hard to judge whether the gang of acne-sufferers from

Albuquerque¹ are just messing about or whether Microsoft really has got a future as a proper company. Government support for entrepreneurs is consequently rather uncritical, supporting a wide range of schemes and projects that are doomed to fail. In the US such support can sink tens of millions of dollars into companies which turn out to have been hopelessly optimistic about their technology, their business, or even the sanity or probity of their founders. In Europe the sums are distributed in smaller pieces to more enterprises (for no good reason, but they are), but the approach is the same.

But support for science is different. Funding support, and the publication and promotion record it is based on, comes from being right, not from being adventurous and entrepreneurial, and so 20 years of assaying kinase cascades in obscure organisms counts for more than trying an intuitive leap into the unknown. In particular, publishing your wild speculative leap is almost impossible without years of careful experimental support to show it is not really speculative or wild at all, but a modest, logical extension of what went before. But if you do not publish, who else will find out about your idea, add to it, bring their own insight, shoot it down to replace it with an even better one? It is a fundamental, almost a cliché, of commercial entrepreneurship that individuals rarely make the great breakthrough. It is a team, a group of people, because many minds make light to illuminate the darkness of ignorance. I have a great idea for a business, I think, but someone else knows not just why it is in fact not a great idea but what aspect of it might be made great, and how. A third brings their perspective, a fourth theirs, and suddenly we have something that really is great. We hope. Without that communication, sharing, dialectic, all we have is one guy in a pub saying ‘yeah, I had this great idea once ...’

This is the reason that Bioscience Hypotheses exists. We publish papers which argue new, speculative, *entrepreneurial* ideas in the life sciences. Unlike the rants of the internet, what is published here has to pass a barrier of scientific credibility. Minds should be open but not gaping: anyone trying to revise the laws of physics or assume that genes are carried by brainwaves can set up their own blog, and good luck with that. The idea has to be logical, credible, and consistent with what is known, because otherwise readers will just dismiss it out of hand, and that is a waste of paper. And it has to be clearly expressed. The same is true of Business Plans for a new commercial endeavour. When I am asked to write (or, often, to rewrite) a Business Plan, the issue is not only the underlying technical ideas, but also how they are expressed. A Business Plan is a tool for selling an idea, and so is a paper. Both must be clear enough to convince.

But apart from logical sense, consistency with what is known about biology, testability, and (if you have it) some indication from the real world that your idea is not wrong, what we are looking for is *entrepreneurship*. Something a bit daring, a bit unusual, a bit risky, but if it is right something that could change at least a small part of the world.

REFERENCES

¹ Although Microsoft started in garages in Menlo Park and Palo Alto, its first actual office was in Albuquerque, NM.

1) Rodney Dale. "The Sinclair Story". Duckworth (London), 1985