

In conversation with Sir Gregory Winter, 2018's Nobel Prize-winner in Chemistry and the most successful genetic engineer in Britain.

Not many scientists can claim that their groundbreaking work led to the world's best-selling pharmaceutical drug. But Sir Gregory Winter can. A pioneer in creating therapeutic antibodies which neutralise the rogue cells that cause disease, Sir Gregory's innovations are involved in around 65 per cent of antibody drugs on the market today.

His entrepreneurial edge has catapulted his research and inventions - made at the Medical Research Council's Laboratory of Molecular Biology in Cambridge - into hugely successful spin-out companies, including Bicycle Therapeutics, Cambridge Antibody Technology (acquired by AstraZenica) and Domantis (acquired by GSK).

We spoke with the super-scientist and Master at Trinity College at Cambridge University the week he scooped the Nobel Prize in Chemistry...

"the Cambridge innovation scene provides access to business expertise, culture and funds"

Q&A:

### **How would you describe what you do?**

*My main interest is in the development of bicyclic peptides as a new platform for pharmaceutical drugs.*

### **Is it easier now as a biotech start-up than when you first started out?**

*I can only speak as a scientist. I think it is easier now in some ways - for example there is more money available for early stage companies, and more opportunity for scientists to learn about business. The flip side is that Angels and VC funds expect a greater degree of professionalism from scientist founders.*

### **What are the most exciting innovations currently happening at the intersection of bioscience and technology?**

*I think the most exciting innovations are coming from the development of bicyclic peptides as toxin conjugates or as immune stimulatory molecules. But I am also completely biased.*

### **How have your ground-breaking discoveries helped to move medicine forward?**

*The work from me (and others) in the antibody field has created a revolution in the pharmaceutical industry. It has allowed the blocking of protein receptors and their protein ligands on the surface of cells, thereby allowing control of biological pathways within cells. It has provided new ways of killing cancer cells through their actions as checkpoint*

*inhibitors and through classical antibody-mediated mechanisms. It has led to breakthroughs in medicine, ranging from treatments for immune inflammatory diseases such as rheumatoid arthritis and for intractable cancers such as malignant melanoma.*

**How do your roles as scientist, entrepreneur, inventor and Master at Trinity College at Cambridge University feed each other....**

*My main role now is as Master of Trinity. I have drawn on the other roles to support the redevelopment of Cambridge Science Park (which was founded by the College in the 1970s), involving the provision of more space for start-up and growth-phase companies. As advisor to various capital funds I help evaluate Cambridge companies for funding. And I encourage Cambridge students and early career academics to pursue their ideas and get involved in the start-up scene.*

*“location is crucial. I can’t imagine that my success would have happened elsewhere”*

**What are your predictions for the future? What scientific inventions could we see in 15 years' time?**

*I wouldn't like to make predictions - better to ask the young people who will make the inventions. In any case they wouldn't be inventions if they were obvious enough for me to predict now...*

**How is Brexit challenging the UK science scene, and how do you plan to meet those challenges?**

*At the moment the main problems are the uncertainty with respect to the EU funding for science, the potential loss of EU collaborations and our ability to attract EU students and scientists here. These are important issues for us here and globally.*

*I hope that means will be found to replace the EU funding, and to make it as easy as possible for skilled EU workers and students to come here. Currently the Royal Society and other institutions are engaging with the Government on these matters, and I support these efforts. At the same time, I am doing my best to encourage interactions with the rest of the world through our overseas alumni, and to raise funds to meet the uncertainties.*

**How is your location in the Innovation Corridor (AKA the sci-tech superhub between London and Cambridge) crucial to your (and your businesses') success?**

*I can't imagine that it would have happened elsewhere. In the biomedical sphere, Cambridge, the powerhouses of University research and associated institutes such as the MRC Laboratory of Molecular Biology, and the CRUK, EBI and Sanger Institutes attract the best students and scientists in the world. The many science parks around Cambridge*

*provided accommodation for my start-up companies, and the possibility of shared services and facilities, especially at the earliest stage. Increasingly the Cambridge innovation scene is providing access to business expertise, culture and funds.*

### **Words of wisdom for the next generation of innovators?**

*Bear in mind that established industry is often not receptive to paradigm shifts. So don't be disheartened - form your own start-up company!*

Topics

- [Science](#)
- [The University of Cambridge](#)