

Technology transfer

Most universities, academic institutions and not-for-profit research organizations now have technology transfer offices that bridge the divide between academia and industry. Our two interviewees this month discuss the career opportunities offered by this discipline.



Joel B. Kirschbaum, Ph.D.
Director, University of California San Francisco (UCSF) Office of Technology Management, UCSF, California, USA.

Since it was founded in 1996, the UCSF Office of Technology Management (OTM) has helped to launch ~40 start-up life science ventures based on UCSF technologies. “The OTM analyses each invention to determine its licensability, and decides what type of intellectual property protection to invoke. It then develops and implements a comprehensive management plan and marketing strategy for UCSF’s technologies, and negotiates and administers the licences (which can exceed 20 years),” explains Joel Kirschbaum, co-founder and Director of the OTM. The office manages over 1,300 inventions, which have averaged ~US\$66 million per year in licence income and litigation settlements over the past 10 years.

Early in his career, Kirschbaum embarked on a traditional research path. He completed his Ph.D. in the laboratory of James D. Watson

(1962 Nobel Prize winner for the discovery of the structure of DNA) at Harvard University, Cambridge, Massachusetts, USA. Then he won a Helen Hay Fellowship, and did postdoctoral research in gene control mechanisms at the Medical Research Council Unit for Molecular Genetics in Edinburgh, UK, and the Department of Molecular Biology, University of Geneva, Switzerland.

After completing his postdoctoral research, Kirschbaum took a junior faculty research position at Harvard University. “At the same time the biotechnology industry was just gaining visibility. ‘Genetic engineering’, as the industry was called in the late 1970s, held enormous promise and offered an opportunity for variety that contrasted with the relative predictability of an academic research career,” he says.

He succumbed to the lure of the biotechnology industry and held R&D management positions of increasing responsibility with Stauffer Chemical Company, Berlex Biosciences and Ribogene. In these positions, he observed that the biotechnology industry had specialist researchers and business people who operated in parallel worlds but who needed to work seamlessly together to achieve a common goal. This was often challenging

because they spoke different languages and dealt with very different concepts.

Importantly, Kirschbaum realised that people who can speak both the science and business languages could bring considerable value to their employers and colleagues. “Although my job titles and venues have changed over the years, everything I have done since the early 1980s has been a variation on the theme of combining business, science and technology.”

In 1996, Kirschbaum was attracted to UCSF to help build its technology transfer operation. “It added the university variable to the equation, gave me an opportunity to help create a respected business operation, and made use of my first-hand experience and perspectives as an academic researcher, industry R&D manager, entrepreneur and strategic advisor to venture capitalists and life science companies.” In parallel, he maintains the independent biotechnology consulting practice that he founded in 1990.

Kirschbaum finds bridging the gap between academia and industry a rewarding process. “These diverse elements can often be at odds with each other, and orchestrating their harmonious interaction to produce an outcome that stands to advance health worldwide is very satisfying,” he concludes.



Clive Stanway, Ph.D.
Chief Scientific Officer, Cancer Research Technology, London, UK.

Cancer Research Technology (CRT) is the technology transfer and development company owned by the charity Cancer Research UK (CR-UK). CRT facilitates the identification, protection, development and marketing of new cancer therapies, diagnostics and enabling technologies. Proceeds are shared with inventors and their institutions, and profits are returned to CR-UK to support further cancer research.

As Chief Scientific Officer (CSO) of CRT, Clive Stanway interacts with cancer researchers in academia and industry, research strategists and policymakers. “My responsibilities include representing CRT and CR-UK, discovering and sensing developments in the external environment that are relevant and important to CRT and reporting on these, and seeking new

scientific opportunities and bringing them into the CRT development process,” he says.

Stanway’s early career decisions were driven by scientific curiosity. His interests first took him to Nottingham University, UK, to study botany as an undergraduate, and then to Imperial College in London for his Ph.D. in microbiology. His postdoctoral research was completed at Oxford University, UK. “I enjoyed being part of a community involved in fundamental discovery,” he explains.

Following a 4-year independent research fellowship in the Department of Plant Sciences at Oxford University, Stanway decided to join the biotechnology company Xenova. “My decision was motivated by a realisation that I wanted to apply science to meet the needs of society,” he says. Although his role at Xenova was as a molecular biologist and geneticist, the company gave him the opportunity to become familiar with the drug discovery process. This led to his promotion to head of the assay development group, with additional responsibility as a member of the Xenova Discovery Division Management Team.

After 3 years, Stanway moved to the biotechnology company Prolifix to become Head of Biology. Here, he was responsible for target

validation, assay development and evaluation of compounds in drug discovery. “I’ve always tried to keep changing and I’ve found diversity of experience to be very valuable,” he says.

Two years later, he decided to join CRT and has remained with the company for over 10 years. “I wanted to work with the many world-class academic cancer researchers in the UK to help take their discoveries forward towards opportunities for therapeutics,” he says. Initially he was head of a team that sourced and developed projects arising from the UK cancer research community. Then he directed the establishment and growth of CRT’s drug discovery laboratories.

Now as CSO of CRT, Stanway enjoys the challenge of the diversity, complexity and ever-changing nature of the science involved and determining how the knowledge can be applied to therapeutic opportunities. “Underlying this is the thought that, through the multidisciplinary hard work of the CRT team and other colleagues, we might help develop a new treatment or diagnostic for cancer patients.”

WEB SITE

Career snapshots: http://www.nature.com/drugdisc/nj/nj_dd_arch.html