

Catching the wave in China

Connie Johnson Hambley

China is presenting the pharmaceutical world with unprecedented opportunity. Here is what is happening there and how you can be a part of it.

Catching a trend at its earliest stage and reaping its rewards as it advances is easy only in hindsight. It takes more than being able to identify a trend to ensure job security: it takes understanding the factors behind the trend to gauge its strength, longevity, direction and sustainability, as well as your place in its potential opportunities. Armed with this information, you can best assess your career options.

Seeds of a boom

In hindsight, it is easy to see the factors that created the biotech boom in the United States. The confluence of world-class academic institutions, human talent, innovative ideas, abundant investment capital, economic incentives and enjoyment of profits combined to create a magnet for the world's brightest who wanted to be educated and work in the United States. Sporadic layoffs in big pharma were not inherently destabilizing because biotech companies were being created fast enough to absorb the talent. Many say there was no better place to be during the boom years than in Cambridge, San Diego or Research Triangle Park.

During the boom, having a PhD or hands-on experience was a guarantee to lifelong employment. It was easy to manage a career when you were in demand and had a pick of jobs. But now, those who can find jobs are often relocating families, taking on less desirable or part-time positions or taking pay cuts. This comes as a surprise to many who feel that they have finally arrived at the station only to find that their train has already left.

In addition, venture capital investment in biotech startups has declined, with some

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venture capitalists citing 'investor fatigue'—characterized as a reluctance to 're-up' financing of laboratories and talent as a drug moves closer to the clinic. As a result, companies cut research staff and run virtually, meaning they consist of management and project managers who coordinate with contract research organizations (CROs). Drug development is increasingly moving offshore through outsourcing and big pharmas such as GlaxoSmithKline and Merck are creating R&D outposts in China, which are taking the jobs with them. In the new reality, a global industry must now include Asia, not just the United States and Europe.

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As a result, opportunities for pharmaceutical professionals are exploding in places like India and China. However, it is China that is poised to enjoy the greatest growth. The ZRG Partners Global Life Science Hiring Index¹ states that in the third quarter of 2010 the Asia Pacific region enjoyed a 20% increase in hiring over the second quarter, whereas the Americas saw a 2% decline in hiring in the same period. Even before the recent decline, the seeds for the boom in China were being sown.

From 'Made in China' to 'Created in China'

"A tidal wave of change is coming to China, and the goal for many is to ride the wave rather than be buried by it," says Jason Mann, who advises biopharmaceutical firms on emerging market strategy with a focus on China. "As Americans we often view the

Chinese through the viewpoint of our own lifetime, as the sudden rise of a new power, but many Chinese view themselves through a historical lens of thousands of years." According to Mann, we are now seeing the impact of reforms in China over the last 30 years. He notes that some observe an unspoken contract at work between the people and the government in post-Mao China: "Give the people an ever-rising standard of living through economic reform and they will focus less on political reform." This emphasis on economic reform combined with China's scale means that the government can mobilize tremendous resources behind favored sectors, with an increasing focus on life science investment and growth.

The Chinese government created a complex series of reforms and initiatives designed to move China from an economy based on manual labor and manufacturing to one of innovation and creation, as articulated in their most recent five-year plan. Biotechnology is a key focus, and the biotech industry in China has grown to nearly \$9 billion from \$3 billion barely five years ago, with much of that growth heavily supported with government investment. An estimated additional \$1.5 billion investment into drug development has been announced.

Barriers to entrepreneurial growth have been removed. Intellectual property laws were revised and high-profile enforcement of those laws has given investors and scientists greater confidence. And with the re-emergence of the stock exchange barely 20 years ago, the longstanding Chinese tradition of private enterprise has been enhanced by strengthening the mechanisms for distributing ownership over a larger number of people. Chinese companies are now mastering that truly entrepreneurial holy grail—the initial public offering. All of these factors show that China is poised for a prolonged period

of sustainable growth and that can translate into job longevity and career advancement.

The human factor

Restructuring laws and funneling money into infrastructure are helpful supports, but it is the human talent that gets the work done. In drug discovery and development, Western-trained pharmaceutical professionals have an edge.

Wang Huiyao, visiting fellow at the Brookings Institution and director general of the Center for China and Globalization, states that China has had 1.62 million students go overseas to get their education since 1978. Only 497,000 have returned to China and only 8% of science and engineering PhD graduates have returned. As China builds its industry, the lack of seasoned professionals is strongly felt.

A hallmark of Western R&D culture is to question what is being presented and not to merely accept information. Scientific rigor is the intellectual process of innovation and creativity where peers and superiors engage in a dynamic dialog of questions and critiques requiring scientists to push back with rebuttals to support their findings. Weaknesses are identified, unusual relationships are discovered and creative problem-solving results. This is in contrast to traditional Chinese education, which has a more top-down approach, where challenging an authority can be uncomfortable. This cultural ethic produces high-quality skills uniquely suited to drug discovery.

In 2008, China launched its 'Thousand Talents' program designed to change China's economy from an investment-driven to a more human resources-driven one. With its large population viewed as a valuable natural resource, the Thousand Talents program is designed to invest in and cultivate human capital. Business entrepreneurs, technical professionals and highly skilled workers make up three of the six targeted categories and each is essential for creating and

sustaining a biotech and life science boom. The plan lures highly trained professionals and researchers to its shores with financial incentives and then uses those professionals to further train local talent.

China is also pouring money and resources into revising and deepening their educational systems to address the needs of their population as a whole and to supply the human capital that their targeted industries require. The Thousand Talents program acknowledges that it is not only book training that young minds need, but experienced professionals to guide them and impart knowledge. And these professionals need not just be 'sea turtles', or Chinese returnees—the plan specifically allows for the recruitment of foreign nationals. Western-trained pharmaceutical talent receives the most interest.

"The young scientists in China are hungry for knowledge. They want to learn and they want to learn from the best," says Yun He, chief scientific officer of BioDuro, the Beijing subsidiary of US-based CRO giant PPD. "The most important factor for success is to have the right talent. The people part is hard. [The] money part is easier." Focusing on cultivating talent in-house, BioDuro launched the BioDuro Learning Institute in 2009 using professional instructors and their own senior management to provide instruction on everything from management skills to good laboratory practices to English.


Limited time of opportunity

Language is not a barrier to working in China. "Most scientists are surprised when they walk into a lab in Beijing and sit down and interact with a team," states John Oyler, president and CEO of BeiGene, a startup cancer research company in Beijing. English is the predominant language in most laboratories because senior and middle managers received essential scientific training in the United States. But Oyler cautions there could be "a short window of time" for a non-Chinese

speaking employee to reap all of the rewards of the current climate.

Both He and Oyler roughly estimate the true unequalled opportunity horizon at five years. "The quality that already exists in China makes it almost too late for some synthetic chemistry and perhaps structural biology professionals," continues Oyler, citing the more systematic and formulaic disciplines more suited to current Chinese educational standards. "Medicinal chemistry scientists have a shorter window. Folks in development or other more specialized areas of biology may have ten years and translational research may be even longer given the sheer number of patients and the importance of proximity to the clinic." These time horizon estimates are supported by both the five-year plan and the Thousand Talents program goals. Certainly stellar talent knows no geographical bounds. If you are preeminent in your field, you will have opportunities regardless of country.

So what does this mean for you?

In China, Western-trained scientists have an edge most are not aware of, and it comes in the very essence of their training. The pharmaceutical industry has always shifted workers around the globe to meet its needs and China is the new frontier. Its growth is not a passing trend but a major force in its early stages. Individual employees may be powerless to avoid being laid off, but they are not powerless to take advantage China's opportunities. 

COMPETING FINANCIAL INTERESTS

The author declares competing financial interests: details accompany the full-text HTML version of the paper at <http://www.nature.com/naturebiotechnology/>.

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1. ZRG Partners. *Global Life Science Hiring Index*, <http://www.zrgpartners.com/Documents/lifescienceindexq32010.pdf>