

China: The Intersection of Innovation

In this informative editorial **Jim Greenwood**, Biotechnology Industry Organization President and CEO, presents an insight into China's growing role in the future of biotechnology.

China has launched an ambitious campaign to grow the biotech industry, which has captured the attention of the industry and opened up potential business development opportunities. As China follows through on its 12th Five Year Plan (2011-2015), industry leaders seek partnering and deal-making discussions to explore the possibilities for expanding into China.

China is in the process of aggressively implementing its five year plan for economic and social development. The government has increased funding for research and development, expanded the talent pool and strengthened intellectual property to encourage and protect innovation by implementing the recent Drug Registration Resolution Draft for drugs under development.

But significant challenges remain. Perhaps most significantly, adopting an innovative culture represents a paradigm shift in China's recent history of focusing on manufacturing and production rather than true innovation.

Secondly, the profound differences between the realities of rural China versus urban China cannot be overstated. China aims to deliver the same standards of care to citizens in remote villages that urban dwellers receive in the country's most populated cities. In addition, China wants to add one year of life expectancy to its citizens and reduce the infant mortality rate by 12 per cent.

The Chinese government recently announced its decision to increase spending on healthcare by 16.3 per cent this year to around \$26 billion, which represents a significant commitment to addressing the inequalities between rural and urban China.

Biotech is one of China's "strategic pillars" for meeting its ambitious goals for healthcare access and delivery. Development of the biotech sector is expected to bring benefits to Chinese people by guaranteeing domestic standards are achieved, particularly in relation to healthcare.

To put this into perspective, two factors are important to

consider – China’s immense population and the role of the government in implementing profound change within the country.

First, China represents more than one-fifth of the world’s population and has more than 100 cities with more than one million people; 39 cities have more than two million residents. The country continues to grapple with consequences based on population growth – from environmental and infrastructure challenges to social instability resulting from the increased pressure on resources. There is considerable need to address these issues, and biotech is among the few industries that holds great promise. For the biotech industry, China represents a massive market with potential for profit even at low margins.

Second, the Chinese government has committed to creating an innovation-friendly ecosystem. China has begun to build its infrastructure and intellectual capital base to support biotech innovation. If it chooses to shape its regulatory and intellectual property policies in tandem with these other components, it is sure to serve as a center of biotech innovation in the next century. In addition, the Chinese government has committed to bringing greater transparency and consistency to its regulatory and legal framework. As an example, the State FDA recently announced rules to speed up the investigational new drug process for innovative drugs in China. China’s IP system also has been improved in recent years, and most of the critical policy frameworks are in place. China could augment these advances by working with other nations to harmonize approaches on clinical trials and the data packages that are needed to gain regulatory approval.

The environment for partnerships between West and East is fertile, and will only improve in the coming years. Biotech leaders are highly interested in new partnerships and research and development joint ventures in China. Many global companies have partnered with China-based contract research organizations and contract manufacturing organizations.

To encourage a dialogue between Eastern and Western companies, BIO is hosting the first BIO China International Conference [<http://bio.org/biochina>] in October. BIO China is an example of how BIO works as a facilitator for the industry, bringing together business leaders, government officials, and other industry representatives to explore the potential for business development opportunities within the country. Through BIO China, BIO hopes to strengthen relationships with members of the Chinese biotech community and with the Chinese government.

BIO represents more than 1,100 members worldwide with 90 per cent of members representing small and medium size companies. BIO members are involved in the research and development of healthcare, agricultural and industrial and environmental biotechnology products and applications. BIO represents biotechnology companies, academic institutions, state biotechnology centers and related organizations across the U.S. and in more than 30 other nations.

BIO’s role is to provide member companies with information about what is involved in doing business with China, what are the challenges, opportunities and risks. The opportunities are abundant – access to a sizable market in China and all of Asia; reduced manufacturing and research costs; opportunities for clinical trial work with a vast pool of patients; and possible financial incentives for Western companies to come to China, hire Chinese employees and bring innovative and scientific skills.

These opportunities are fueling interest in doing business in China.

The biotech industry hopes to strengthen its relationships with members of the Chinese biotech community and government in order to help strengthen and support the growth of the biotech industry within the country. The Western biotechnology industry is committed to encouraging China to strengthen its support for biotech innovation and taking steps to enhance greater investment, as well as collaboration between companies.

Emerging companies are particularly dependent on government laws and regulations that encourage and reward innovation. Biotech products must receive timely and high quality reviews that ensure the safety and efficacy of the products while expediting the delivery of new therapies and technologies to patients and into the marketplace.

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Intellectual property laws are the driving force for innovation and biotech progress. Investors and innovators will do business where they have confidence that their intellectual property will be protected. The greater assurances countries can offer through laws and the consistent enforcement of those laws to protect patents, the more biotech innovation will flourish within their borders.

Respecting that each country is unique; there are several factors that may contribute to growth in the biotech industry in any country. Scientific American's Worldview 2011 assesses individual countries' efforts in trying to build and grow biotech hubs. China's standing in the report is somewhat mixed – the country scored high in the education/workforce measurement, the number of published papers, and China's standing in the overall scores increased this year; China scored low on IP, investment in innovation and overall intensity (measurement of a country's overall efforts to drive biotech innovation). The overall ranking is 30 among the 48 countries ranked.

Leading pharmaceutical companies recognized the potential in China and many jumped on the band wagon early and now have a presence there, including Pfizer, Merck and Lilly, and more companies are set to join them soon. In addition, many biotech companies have taken a strong interest, but are unsure of how to engage in business development activities in China.

BIO is invested in the Chinese economy for the long term. BIO Member Companies are exporting more products and technology to China than ever and want to contribute to a strong and positive U.S.-China commercial relationship.

BIO Member Companies operate in nearly every market and China is the focus of international priorities right now. BIO and its members have been closely watching China's development and implementation of its ambitious healthcare reform plan, including the massive investments into the healthcare sector to provide universal coverage for health insurance, reform hospital administration, and increase primary care in rural parts of China.

BIO Member Companies stand ready to work with leaders in China to create an environment that will support and encourage innovation, and enable boundless growth in biotech. BIO urges the Chinese government to continue to welcome foreign investment and competition in China's biotech sector.

The biotech sector has the potential to create high-value, high-wage jobs around the globe and provide solutions to many of the problems that vex our planet like healing, fueling, and feeding the world. BIO looks forward to continuing efforts and activities focused on bringing this value to China. ■

About BIO

BIO represents more than 1,100 biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. BIO members are involved in the research and development of innovative healthcare, agricultural, industrial and environmental biotechnology products. BIO also produces the BIO International Convention, the world's largest gathering of the biotechnology industry, along with industry-leading investor and partnering meetings held around the world.

Break out box:

- **China will spend \$308.5 billion on science and technology, making biotechnology a major priority, in the next five years.**
- **The Chinese Government will also spend more than \$300 billion on innovative medicine, the cultivation of new varieties of genetically modified organisms and the prevention and control of viral hepatitis and other infectious diseases.**
- **From 2011 to 2015, Biotechnology is expected to generate 1 million jobs, extend people's life expectancies by one year and reduce the infant mortality rate to 12 per cent.**

Source: China National Center for Biotechnology Development.



Jim Greenwood | PRESIDENT AND CEO BIOTECHNOLOGY INDUSTRY ORGANIZATION



Since Jim Greenwood's appointment to BIO in January of 2005, he has markedly enhanced the trade association's capacity – increasing both its staff and budget by nearly fifty percent. Jim represented Pennsylvania's Eighth District in the U.S. House of Representatives and is a senior member of the Energy and Commerce Committee.

From 2001 to 2004, Jim served as Chairman of the Energy and Commerce Committee Subcommittee on Oversight and Investigation.

Prior to his election to Congress, Jim served six years in the Pennsylvania General Assembly and six years in the Pennsylvania Senate.