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Populations of data propel China to the forefront of biotech

Jan. 05, 2018 -- Eight years ago, Jinzi Wu was living the American dream in Durham, North Carolina, as a vice-president at GlaxoSmithKline. He was leading the pharma giant's global HIV drug discovery program and reaping handsome rewards with a big home and comfortable lifestyle.

He gave it up to pursue a new dream back home in China: to launch a bioscience start-up with the ambition to eradicate hepatitis C – in a nation where 25 million people are infected with the virus – by 2030. Wu traded comfort and security for what he calls a “crazy” 24/7 life, however, his company Ascleto wins innovation awards and global partners such as Roche and Johnson & Johnson, he feels fortunate to have become a leading player in Chinese biotech and healthcare revolution.

“I think we're at the best time for innovation in Chinese biotech,” says Wu, whose American adventure began with his PhD studies in the 1980s. “So I feel the Chinese dream coming true.”

China aspires to transform the future of healthcare in upcoming decades, from cell-therapy-based cancer cures, to robotic surgeons, to the new frontier of precision medicine. Wu's journey reflects what UBS global healthcare analyst Lachlan Towart calls “a major transition of an industry from being a copycat to an innovative industry.” China is surging to the forefront of the world's cutting-edge medical technologies, as a rapidly aging population – 300 million seniors by 2030 – makes healthcare R&D an urgent priority.

China's government recently approved a plan called Healthy China 2030, pledging to build a healthy nation in the next 15 years – largely through the development of biotech, Artificial Intelligence and robotic caregiver services. Demographics and spectacular wealth-generation will

soon make China the world's most lucrative healthcare market, with McKinsey projecting its healthcare sector to become a \$1 trillion business by 2020. "It's a billion-dollar investment opportunity," says UBS Equity Analyst Carl Berrisford.

"This is real cutting-edge science and it's just reaching the market in the West – and the Chinese are there, absolutely there in terms of number of trials," says Towart. "This is an area where, if successful, it will genuinely revolutionize cancer treatment."

Massive quantities of data, and the greater willingness of Chinese consumers to share it online compared to the West, underpin China's biotech potential: "The accessibility of this data to R&D companies, to insurance companies, to med-tech companies, to Artificial Intelligence companies – that's something the Chinese might have a genuine advantage in," says Towart.

One of the most exciting areas where this data will be deployed is the emerging field of precision medicine, in which genetic, biological and lifestyle data are analyzed by complex algorithms to create bespoke healthcare plans for users. Through online apps, companies such as Shenzhen-based iCarbonX will send users precise daily instructions on everything from what to eat based on genomic data, to how to ward off a hereditary risk of cancer. China's exploding prowess in Artificial Intelligence – as it pursues a state-driven mission to be the global AI leader by 2030 – will fuel the precision-medicine transformation, which relies on crunching vast amounts of genomic data to offer tailor-made medical solutions.

"The convergence and integration of informatics and Artificial Intelligence into drug discovery – this is a specific field where China is reaching critical mass in becoming the world leader," says Tracy Yeo, managing director at biotech research firm ChinaBio.

In China's rise to global technology leadership, the new frontiers of biotech and AI are merging to reinvent the future of healthcare. It is creating what Yeo describes as a "perfect storm" of Chinese innovation that will accelerate rapidly, with tens of billions in VC funding and the return of top Chinese research talent from the West – a winning equation for the global investor. "There will be an enormous opportunity in healthcare for using Artificial Intelligence, Big Data processing," says Towart. "This is an area where you are seeing a lot of investment."