

# Science Island makes things happen

Chinese experts working overseas are being lured home by the exciting developments at a major research center

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A device called a tokamak that holds hydrogen plasma hotter than the core of the sun. Spectrometers that direct lasers to monitor atmospheric pollution. Magnetic-field generators that are tens of thousands of times stronger than a fridge magnet.

These are just some of the mind-boggling projects on the Science Island of the Hefei Institutes of Physical Science, a branch of the Chinese Academy of Sciences.

The island, a 2.65-square-kilometer peninsula surrounded by the Dongpu Reservoir in the northwest of Hefei, East China's Anhui province, is home to 10 research institutes, dozens of key laboratories and more than 2,400 scientists from across the world.

When Wang Junfeng, 48, first heard of Science Island in 2009, he had been doing postdoctoral research at Harvard Medical School for five years.

A stable, high-magnetic field laboratory (HMFL) that was being built on the island piqued his curiosity.

"Nineteen Nobel prizes have been given to research related to magnetic fields since 1913," said Wang. "It is a key to the treasure chest of new scientific discoveries."

From 1995 to 2001, Wang was earning his doctorate at the National High Magnetic Field Laboratory in Florida, the United States, which currently boasts the strongest magnet on Earth.

The laboratory on Science Island was aiming to usurp that position. The news excited Wang, and he flew to the place to see it with his own eyes.

It just so happened that Kuang Guangli, the director of the HMFL in Hefei, was urgently seeking scientists who could make full use of the facility once it was completed. The two of them met.

"Kuang is a charismatic leader," Wang recalled of his first meeting with the director. "And he values talent."

After a long talk with Kuang and a tour around the peninsula, Wang called his wife in Boston that night and told her that he wanted to work on the island.

A month later, Wang returned with his wife and two children.

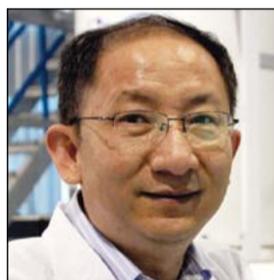
"I could still remember that day. It was Aug 2, and we flew 13 hours from Boston to Shanghai, carrying 12 pieces of luggage," said Wang.

Two colleagues from the lab picked them up at the airport in Shanghai and drove six hours to Hefei. It was past midnight when Wang settled down in an apartment rented for them.

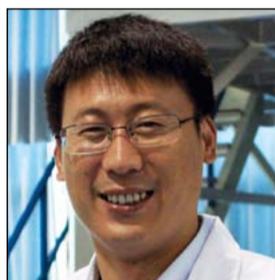


The Science Island of the Hefei Institutes of Physical Science is home to more than 2,400 international scientists.

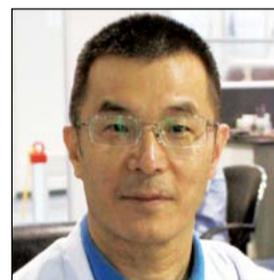
PHOTOS PROVIDED TO CHINA DAILY



**Wang Junfeng**, deputy director, High Magnetic Field Laboratory.



**Liu Qingsong**, deputy head, life science department.



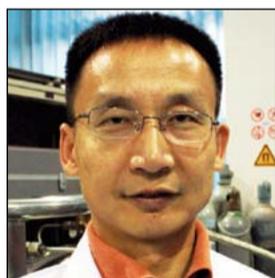
**Ren Tao**, researcher, high-throughput screening of new drugs.



**Zhang Xin**, researcher, cell biology.



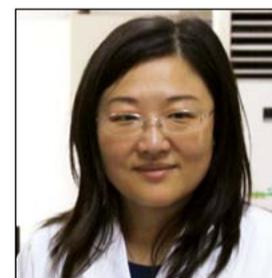
**Zhang Na**, researcher, structural biology.



**Lin Wenchu**, head, laboratory-animal center.



**Wang Wenchao**, researcher, molecular biology.



**Liu Jing**, researcher, chemical biology.

The HMFL has two research tracks — life sciences and material physics. Wang was appointed to head the life sciences department shortly after he joined the lab.

Wang needed to put together a team and he soon thought of Liu Qingsong, who went to Harvard Medical School in 2006, two years after Wang.

With his background in chemistry, Liu, 39, did postdoctoral research on medicine at Harvard. He later became a researcher at the Dana-Farber Cancer Institute in Boston.

Wang told Liu about the lab. Liu organized a group of Chinese scholars to return to China.

In 2010, the group first visited universities in Shanghai. They then boarded a high-speed train to Hefei and headed for Science Island.

"We also met Kuang, and he told us about his return from Germany when he was 32 to build China's own tokamak, the nuclear-fusion installation," said Liu.

"He told us that they worked on it for three years but failed. But they didn't give up, and succeeded one year later.

"I was truly inspired by Kuang. And I thought that this is the place to make things happen."

After returning to Boston, Liu spread the news about Science Island and looked for other candidates whose research fit the lab's life science department.

Liu first told his wife, Liu Jing, who was his classmate at Nankai University in North China's Tianjin. She was also a postdoctoral researcher of chemical biology at Harvard.

The two went to the US for doctoral studies in 2001, but they were in different universities. They got married in 2009 when they finally settled down in Boston.

When she knew her husband was serious about moving to Hefei, Liu Jing started preparing to do so as well.

Liu Qingsong also tracked down his Harvard friends who were in specialized, exciting fields: Zhang Na, an expert on using nuclear magnetic resonance to study RNA (ribonucleic acid) molecules; Zhang Xin and Wang Wenchao, a couple researching cell biology; Lin Wenchu, who specializes in cancer research using mouse models; and Ren Tao, who focuses on high-throughput screening for new drugs.

Liu Qingsong told them about the

opportunities offered by the lab and received positive responses.

One after another, they all passed the lab interviews and arrived on Science Island by the end of 2015.

The plan at the lab is finally being realized. The areas of focus range from molecular research to drug discoveries and testing.

The scientists are all conducting biological experiments in the high-magnetic field.

The aim is to identify the working mechanisms of some cancers so that effective drugs and therapies can be developed.

China's rapid economic growth and the broader opportunities offered by its development have become strong pull factors for overseas Chinese students and scholars.

"When I went abroad, the economic gap between China and the US was big," said Ren Tao, who went to University of Nebraska-Lincoln to study microbiology in 1997. "But things change gradually."

Ren later went to work at Harvard Medical School. He spent 18 years living in the US before returning home in 2015.

"I had an easy and comfortable life in the US, but I always felt that I didn't make full use of my knowledge," he said.

"So when I learned that mass entrepreneurship and innovation were becoming a trend in China, I was eager to be a part of it."

With the experience he gained in academia and business during his studies in the US, Ren joined Liu Qingsong's team as the manager of their medicine startup founded in 2015.

The company has 20 new potential drugs against diseases, including leukemia, lung cancer and lymphoma. Some are about to enter clinical tests.

"In our 70-strong team, 25 are returnees from abroad," said Ren.

Lin Wenchu received his PhD from the University of Texas in 2006. He worked at Harvard Medical School and the Dana-Farber Cancer Institute before returning to China in 2013.

"Many people thought that my career was stable in the US and asked me why I came back," recalled Lin. "But I always wanted to have my own lab and do my own research, and I got the opportunity here."

Lin, who specializes in cancer research using mouse models, created a laboratory-animal center on Science Island in 2014.

Last year, he set up a company that aims to develop new diagnostic methods and therapeutic strategies for personalized cancer care.

"It's been done in two years, and that would be impossible if I were in the US," said Lin.