

ABOVE: Officials from the University of Pittsburgh and Tsinghua University met in Beijing in April to ratify an agreement that makes two years in Pittsburgh part of the biomedical research training of Tsinghua students. RIGHT PAGE: Shi and Levine sign the agreement.

BEIJING IN PITTSBURGH

CHINA'S CREAM-OF-THE-CROP PHYSICIAN-SCIENTISTS WILL TRAIN HERE

STORY BY MAUREEN PASSMORE

Q & A BY ERICA LLOYD

A few months ago, Yigong Shi felt that his university was missing something. As dean of Beijing's prestigious Tsinghua University's School of Life Sciences, Shi, a PhD, was searching for a U.S. school to send Tsinghua medical students to for biomedical research experience. Meanwhile, the University of Pittsburgh's Arthur S. Levine, an MD, senior vice chancellor for the health sciences and dean, School of Medicine, had been traveling to China in an effort to build relationships with universities there. This was unfolding while Jeremy Berg was about to step down as director of the National Institute of General Medical Sciences to accept a senior position at Pitt. Berg knew both men and, sensing an extraordinary opportunity, introduced them.

Levine and Shi met in Beijing, and, though he had a couple of other high-profile U.S. universities interested, Shi chose the University of Pittsburgh for the unique collaboration. Beginning in the summer of 2012, 25 to 45 Tsinghua medical and graduate students each year will travel to the University of Pittsburgh to enter a two-year biomedical training and research program at the medical school. The two years the medical students spend at Pitt will complement the six years of training they'll receive in China. In addition, the two universities will take turns hosting an annual symposium featuring researchers from both institutions.

A big deal? Simply put, yes. Here's why: Tsinghua is highly regarded for its top science and engineering programs. It has produced one-fourth of the members of the Chinese Academy of Sciences and many prominent leaders in China, including Hu Jintao, China's current president. Shi, himself, is a celebrated structural biologist, renowned for discovering a novel path in cancer treatment. He is also what the Chinese call a "sea turtle"—part of a wave of Chinese professionals who gave up prominent positions abroad to return home. In 2008, while he was professor of molecular biology at Princeton University and after an 18-year residence in the United States, Shi surprised the science community when he turned down a $10 million Howard Hughes Medical Institute investigatorship and resigned from Princeton to return to Tsinghua, his alma mater. (Shi earned his undergraduate degrees in biology and mathematics there.) After careful consideration, Shi chose to partner with Pitt. Levine considers it a win-win, noting, "Our medical school is almost unique among U.S. medical schools for the extraordinary growth and visibility we've had in a short period of time. The advantage for Tsinghua students coming to Pitt is that they will become immersed in a peer-reviewed research culture to complement their medical studies. And, we're adding to our lab workforce medical students who are the best-of-the-best from a country of almost 1.4 billion people and who will, undoubtedly, become leaders of medicine and biomedical research in China. They, presumably, will have a good experience in Pittsburgh, and that will create a durable and important relationship."

Shi knew Berg (who is now Pitt's associate senior vice chancellor for science strategy and planning) from his grad school days. He received his PhD in molecular biophysics from Johns Hopkins University, where Berg was his thesis advisor; and he was eager for Tsinghua students to share the experience and opportunities he had with a U.S. education. Now, in a sense, Tsinghua students will share Shi's mentor, as well—Berg will oversee the program at Pitt.

Recently Dean Shi shared with us his perspective on the partnership and on medicine and science education in both countries.

PITT MED: The United States faces a dearth of physician-scientists. Can you talk a bit about the importance of graduating more physician-scientists in China?

YIGONG SHI: China has seven million physicians, of whom two million have received reasonable training and are providing quality health care to the majority of China's 1.35 billion people. However, China has a severe shortage of physician-scientists. Compared to the U.S., the situation is much direr.

Why this partnership? Why Pitt?

The medical school at the University of Pittsburgh is exceedingly strong in basic biomedical and translational research. The affiliated hospitals are first rate in the U.S. and perhaps in the world. In addition, the size of the medical community at Pitt is large enough to accommodate our students. Last, but not least, I have been favorably impressed by the vision and leadership of Dr. Levine.

You've spoken of modernizing Tsinghua's teaching philosophy. What did you mean?

The traditional teaching method in China emphasizes passive listening and memorization. Students seldom raise critical questions and comments. I have been advocating for active learning in the classroom (engagement between teachers and students, small class size, active discussion groups, student presentations, research-based learning, etc.) ever since I returned to China.

You are a product of both the American and Chinese educational systems. What do you see as the strengths and weaknesses of each?

The strength of the Chinese educational system is clear: Students receive comprehensive and sound knowledge in mathematics and natural sciences. The weakness is also evident: The system does not encourage innovation!

In the United States, it is quite the opposite: Innovation is encouraged by the educational system, but students are only exposed to shallow training in mathematics and natural sciences.

Faculty members here are excited to work with students from Tsinghua. What might they learn from them?

They will be impressed by the overall "raw" quality of the students. But these students need to be carefully crafted before they can be truly "useful" to our society.

As one of China's "sea turtles," how has the experience been for you and your family?

So far, so good. I am physically and mentally exhausted in China, much more so than in the U.S. But I am happy and enormously enjoy what I am doing for my home country. ■



COURTESY TSINGHUA UNIVERSITY