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Biophysicist in Profile

QIANG LÜ

“I was always fascinated by two things as a kid: stars in the sky and trains on the tracks,” says Qiang Lü, Vice President of Biology at WuXi AppTec, a global pharmaceutical, biopharmaceutical, and medical device outsourcing company based in China and the United States. “Basically I was on my way to becoming a pure physicist.” In primary school, however, his father’s influence began to take hold. An engineer at an electronics company, he introduced Lü to the joys of tinkering with gadgets such as radios, televisions, and audio amplifiers. Lü’s mother, a nurse, also encouraged Lü’s interest in science and technology. “[My parents] always wanted me to become a scientist, without alternatives,” says Lü. They sent him to a top middle school in Chengdu, capital of Sichuan Province in the southwest of China, where he received a rigorous education, especially in math. “I thought I spent so much time in math that I might as well become a mathematician,” Lü recalls. Instead, he chose biochemistry. “A few months before the college entrance exams, when I browsed around college textbooks, I fell into biochemistry,” he says. He went on to Peking University to pursue this newfound passion.

Lü liked biochemistry so much that he decided to continue on to graduate school. In his first year as a PhD student at Brandeis University, he was introduced to biophysics in *Chris Miller’s* lab, where electrophysiology setups reignited his childhood passion for gadgets. After creating his first single channel recording, Lü was struck by the “simplicity, and the beauty that comes with it,” he says. His advisor made a similarly strong impression on Lü. “Chris Miller not only has great insight into biophysics but more

In my view, good science is something that looks beautiful and makes a difference.”

—QIANG LÜ

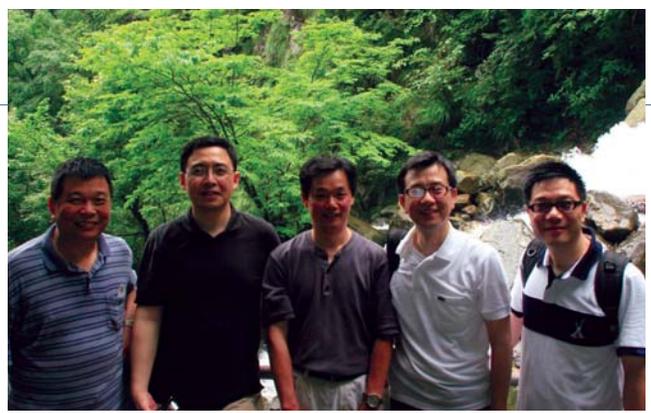
impressively, as a former high school teacher, he could present it in an eloquent and elegant way,” says Lü. *Xiaohua Wu*, a fellow graduate student, now Associate Professor in the Department of Molecular and Experimental Medicine at Scripps Research Institute, remembers what it was like to be “a group of newcomers who helped each other to adjust to the new life in America,” she says, and that Lü adjusted extremely well. “Qiang was an extremely intelligent and diligent student and did very well in both course work and lab research,” she says. “He is also very resourceful and knows what is around and what to build on.”

After completing his doctorate, Lü accepted a postdoctoral position in *Kathleen Dunlap’s* lab at Tufts Medical School, continuing his work on electrophysiology there. “He bravely took on the project of cloning several variants of a gene encoding the voltage-gated calcium channel that is re-

sponsible for transmitter release from avian sensory neurons,” Dunlap says—a great help, she says, as molecular biology was not her area of expertise. “My lab had, for two decades pre-Qiang, studied the G protein-dependent modulation of this channel and its control of synaptic transmission, without knowledge of its structure,” she says. “Qiang’s successful cloning adventure was a key step in identifying the molecular underpinnings of the differential modulation and helped the field at large to begin to link structural features of the calcium channel family to their functional consequences on synaptic transmission and neuronal excitability.”

Lü carried the experience gained during his postdoc to Wyeth Research in Princeton, New Jersey, and, a few years later, to Novartis Institutes for BioMedical Research, Inc., in Cambridge, Massachusetts, taking a leadership role in the Preclinical Safety Profiling division. He worked with his Unit Head, *Laszlo Urban*, on developing automated ion channel assays dedicated to cardiac safety. Lü worked on projects such as developing an electrophysiology panel for safety assessment for hERG, Nav1.5, and Cav1.2 as well as supervising a cellular toxicology group that investigated hepatotoxic and genotoxic effects of small molecules. “Qiang is an excellent leader with good scientific background, outstanding organizational skills, and a can-do mentality,” says Urban. “He has great diplomatic skills; he can communicate difficult matters with charm while being in command.”

Today, Qiang uses all of these strengths abundantly in his management and strategy roles at WuXi Apptec. He focuses on research areas such as neuroscience and pain, and oversees the company’s Discovery Technology platform. “WuXi Apptec is a legendary company that transformed the drug discovery paradigm through innovation and process optimization, taking advantages of large-scale talent and other resources, both preclinical and clinical, in China,” says Lü. Even within the most progressive companies, there are always challenges to be met. Some of Lü’s involve not only how to manage scientists, an art that differs significantly between the US and China, but more personal challenges too, like adapting to each change in his career, and knowing when to look for a new opportunity. “Every change is a challenge, but comes with great opportunities, many of which can be obtained through proactive rather than reactive movement.” After many years working in industry, Lü is absolutely sure of two things: “Change is something that never changes, and



WuXi biology colleagues on a retreat in Zhejiang Province in China. From left: Xincheng Chen, Qiang Lu, Henry Lu, Chichang Chan, and James Wu.

you will never get bored!” he says. Not only does Lü never get bored, he rarely takes a break—though he admits that sitting down to enjoy some classical music or going for a hike once in awhile would be nice.

Meanwhile, Lü still has big plans for the part he’ll play in the future of drug discovery. He wants to “bridge drug discovery in the US and in China, transforming pharmaceutical industry both in Western countries and in China—different patients, different markets,” he says. He was admitted to the highly competitive Recruitment Program of Global Experts, or 1,000-Talent Plan, a career-building initiative to attract top scientists to carry out leading technologies research and develop high-tech industries in China. He also wants to teach, including teaching in an industry setting, he says, and hopes to inspire young Chinese students to study science and work in drug discovery. “At this stage, when I am as old as Chris was when I was his graduate student, the most rewarding feeling is to see the young faces around me in China gaining more and more experience and enjoying more and more about drug discovery,” he says.

Lü himself was once one of these students. He joined the Biophysical Society in 1992 as a graduate student, and has long since found a home there. “Being a member I feel I belong to a family where I grew up,” he says. Today, he regularly attends the Annual Meeting, and frequently hires scientists aspiring to industry careers through the Society’s Career Center. “The Annual Meeting is a great opportunity to reunite with old friends and network with new friends,” he says.

Whatever the future holds for drug discovery, Lü remains focused on what’s important. “In my view, good science is something that looks beautiful *and* makes a difference,” Lü says. “While I am unable to make cutting-edge basic discoveries, I am confident that I can contribute in its application to drug discovery, and to bring more life to the science as well as to the patients.”