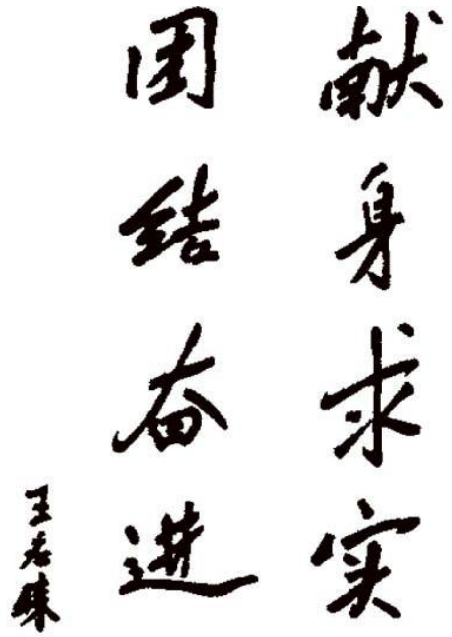

Past Lecturers:

Dr. Xiadong Wang, UT Southwestern
Dr. Min Han, UC Boulder
Dr. Yigong Shi, Princeton
Dr. Steven Chu, Stanford
Dr. Teresa Wang, Stanford
Dr. Sunney Xie, Harvard
Dr. Tian Xu, Yale
Dr. Edward Yeh, MD Anderson
Dr. James Chen, UT Southwestern
Dr. Wanjun Chen, NIH/NIDCR

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2012
Wang Ying-Lai Memorial Lecturer

Xiaowei Zhuang, Ph.D.

Howard Hughes Medical Institute Investigator
Professor of Chemistry and Chemical Biology and of Physics
Harvard University

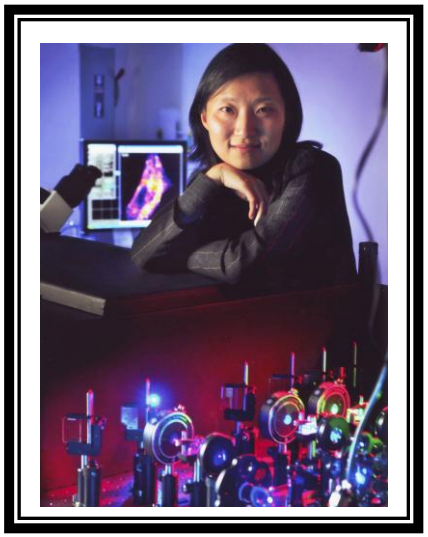
Presenting

"Bioimaging at the nanoscale: Single-molecule and super-resolution fluorescence microscopy"

Hosted by

The Department of Pharmacology & Toxicology
And
The Robert A. Welch Foundation

Friday, June 8, 2012
2:00 p.m.
2.212 Basic Science Building Auditorium



About Dr. Xiaowei Zhuang

In 2012, Dr. Xiaowei Zhuang was elected as member of the National Academy of Sciences, the most prestigious honorary scientific society in the country. According to *ScienceInsider*, Dr. Xiaowei Zhuang could be a poster child for the initiative of electing outstanding young scientists by NAS. At age 40, she is a full professor at Harvard University and an Investigator of the Howard Hughes Medical Institution since 2005.

Dr. Zhuang was nurtured by her parents in academia. Her father is a physics professor who challenged her imagination while she was very young. She graduated from University of Science and Technology of China with a B.S. in Physics, and from University of California, Berkeley with a Ph.D. in Physics. She became interested in biology when she became a postdoctoral fellow at Stanford University when she joined the lab of Professor Steven Chu, also a former speaker in this series of Wang Ying-lai Memorial Lectures. She studied the mechanisms of folding and catalysis of RNA. Since joining Harvard University, Dr. Zhuang accepted the challenge of understanding the behavior of individual biological molecules and complexes in vitro and in live cells. The Zhuang research lab works on the forefront of single-molecule biology and bioimaging, developing and applying advanced optical imaging techniques. Her group invented STORM (stochastic optical reconstruction microscopy). Dubbed a "super-resolution" imaging technique, STORM allows researchers to resolve 20-nanometer objects—a substantial improvement over the 200-nanometer resolution limit imposed by conventional light microscopy. Her laboratory is most productive and always publishes in front line journals and she has been awarded numerous prestigious awards in recognition of her scientific accomplishments.

About Wang Ying-Lai

The Wang Ying-Lai Memorial Lecture was initiated in memory of Professor Wang Ying-Lai (1907-2001) in 2001 in recognition of his significant contributions to science and medicine.

Professor Wang was a pioneer in the chemical synthesis of insulin in the 1950s and transfer-RNA in the 1960s. He was also instrumental in the founding of the Institute of Biochemistry of the Academia Sinica in Shanghai. He founded, and was for many years the editor-in-chief of China's premier journal in the field, *Acta Biochimica et Biophysica Sinica*. The most significant scientific contribution of Professor Wang was the chemical synthesis of crystalline insulin from individually synthesized amino acids, the building blocks of protein. This monumental accomplishment represented a conceptual breakthrough in converting lifeless chemicals to a protein with biological activity. Because of his successful work with insulin as well as its significant contributions to science and medicine, Swedish scientist A. Tiselius, a member of the Nobel Prize committee and Chinese-American Nobel laureate C.N. Yang independently suggested Professor Wang be nominated for the Nobel Prize in Chemistry. He was denied the opportunity due to some unfortunate circumstances. However, Professor Wang was allowed to receive a special achievement award at the Miami Biotechnology Symposium in 1988.

The Memorial Lecture brings together scientists from various related fields so as to further advance the knowledge and experience in the field to which Professor Wang had devoted his entire scientific career. Meanwhile the Memorial Lecture offers an opportunity to recapitulate the contributions made by Chinese scientists in the field of science and beyond.