Third KIA Laureate
Fundamental Research

- **Researcher:** Prof. Su-May Yu
- **Nationality:** Taiwan, P. Republic of China
- **Date of birth:** 1952
- **Position:** Distinguished Research Fellow / Professor
- **Scientific affiliation:** Institute of Molecular Biology, Academia Sinica

Project Title: Rice functional genomics for exploring genes and mechanisms that control growth and yield of cereal crops.

Abstract: Rice is a major staple food crop in the world, and is important in both basic and applied research. Since 1989, I have devoted my efforts to various research areas using rice as the primary experimental system. My major research interest has focused on the mechanism of sugar signaling and regulation in plants. In 1993, we made a technical breakthrough with the establishment of an efficient Agrobacterium-mediated rice transformation system. Following this success, I secured precious resources to assemble a multidisciplinary team and established a sizable rice mutant library during 2002-2008. These two technical milestones have gradually promoted our research programs into a competitive position in the world plant science community. In basic research, our original, innovative and in-depth discoveries in mechanisms of sugar regulation, and cross-signaling between sugar, hormone and stress, have contributed significantly to the understanding of how plant growth and development are controlled by these signaling molecules. By studying rice mutants, we have identified many essential genes that could be used to improve yield not only for rice but also for other cereal crops, such as wheat and corn, which are very much needed to ensure food security for the rapidly growing world population.

Biography: Prof. Yu is an internationally highly acclaimed scientist in plant molecular biology and biotechnology. In basic research, she is an outstanding leader in unraveling mechanisms of sugar signaling and regulation on plant growth and development. Her original, innovative and in-depth discoveries in mechanisms of sugar regulation, and cross-signaling between sugar, hormone and stress, contribute significantly to understanding of how plant growth and development are controlled by these signaling molecules. Her scientific achievements are highly recognized internationally. She also made groundbreaking technical advance for efficient rice genetic transformation. Her lab first successfully developed the Agrobacterium-mediated technology for rice transformation, which is now adopted worldwide in the plant science community. She is not only leading at the forefront of biotechnology, but also transforming conventional agriculture with modern technology. Her superb leadership also led to establishment of a precious and sizable rice mutant library and database. These valuable resources are shared by the international plant science community, and contribute significantly to worldwide cereal basic research and crop improvement.