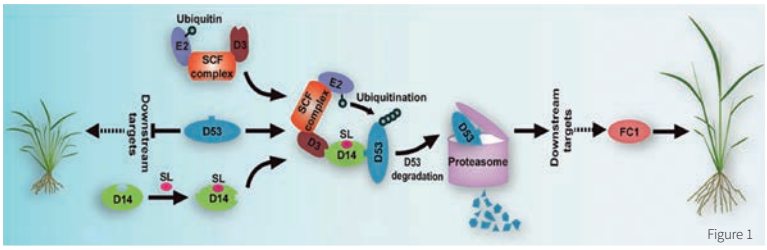

Figure 1

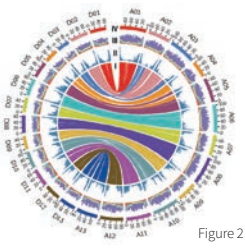

Figure 2

The State Key Laboratory of Crop Genetics and Germplasm Enhancement, Nanjing Agricultural University

Advancing research in crop genetics and breeding

A novel research platform with state-of-the-art facilities and faculty is leading the way in agricultural research.

The State Key Laboratory of Crop Genetics and Germplasm Enhancement was established in 2001 at the Nanjing Agricultural University (NAU), with the approval of the Chinese Ministry of Science and Technology. Geared to meet the global threat of food security, the laboratory is conducting cutting-edge research in agricultural science and promoting international collaborations. It is a modern and high-quality research and training base that leads crop science research in China.

Based on NAU's strengths in crop science, plant nutrition and olericulture, the laboratory focuses on three main research directions: genetic and genomic analyses of major breeding target traits, the genetic basis and creation of germplasms, and new breeding methods to make improved varieties of field and horticulture crops. It specializes in germplasm collection, evaluation and enhancement. Its collection of soybean germplasms is among top three globally. In recent years, the laboratory has also led or participated in key genomic research projects. The establishment of a bioinformatics centre further underpins its support for omics research.

Currently, average annual research budget of the laboratory exceeds 100 million RMB, of which, more than 70% comes from grants for national projects. This strong funding has led to a series of achievements in both basic and applied research. The laboratory has published many high-quality papers in top international peer-reviewed journals. A study on the control of rice tillering was published in *Nature* (Figure 1), and studies on the cotton genome sequencing and cloning of a insect-resistant gene in rice were published in *Nature Biotechnology* (Figure 2). The laboratory's research also makes significant socioeconomic impacts. New germplasms and crop varieties the laboratory innovated not only provide research materials for basic research, but also serve as new resources for crop breeding. Successful commercialization of the laboratory's research achievements has already led to millions of RMB's economic benefits. With a supportive research environment, state-of-the-art equipment and enhanced capability of conducting national key projects, the laboratory has won numerous awards for its research achievements, with two to three national-level awards every five years.

The laboratory also offers ample opportunities of cross-institution and international collaborations. It houses the Sino-Australia Joint Laboratory, NAU-BGI joint Laboratory and a Collaborative Innovation Centre on Crop Genetic Resources. Collaborations with some world-class institutions have brought high-quality research output. The laboratory has organized multiple high-profile international conferences, which have promoted its global influence. As a talent base under the Plan 111 by the Chinese Ministry of Education, the laboratory has established essential collaborations with world-famous scientists from different countries.

Talented researchers are key drivers of the laboratory's development. The laboratory boasts 86 faculty members, including three academicians of the Chinese Academy of Engineering, three National Science Foundation Distinguished Young Scholars, two Cheung Kong Scholars, as well as researchers recruited under the national 1000 Talent Plan and other national talent programmes. They conduct research on a wide range of crops, such as rice, wheat, cotton, soybean, brassica and maize, as well as vegetable crops. This makes the laboratory an ideal place for cross-team collaborations in crop science research.

With a talented team, the State Key Laboratory of Crop Genetics and Germplasm Enhancement at NAU is striving to become a world-class research centre for crop science. All scientists who are interested in crop science are welcomed to join us.

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