Taiwan Biobank Presents Taiwanese Diabetes Predictive Model on its 3rd Anniversary

The Taiwan Biobank project, a national-scale project run by Academia Sinica, recently successfully identified a precise predictive model for diabetes of Taiwanese people. Members of the Taiwan Biobank presented their research results on the 3rd anniversary of the inauguration of the biobank project on Friday, October 30, 2015, at the Institute of Biomedical Sciences, Academia Sinica.

The Taiwan Biobank is a large–scale population-based genetic database, and one of the most important national-scale projects run by Academia Sinica. The project aims to gather genetic data on over 200,000 Taiwanese people within 10 years. The data collected can be used as a precious resource to study the correlation between genes and disease, find causes and treatments for chronic diseases prevalent in Taiwan, and advance the study of personalized medicine. Areas such as relationships between genetics and environmental exposure and diet, and the etiology and progression of chronic diseases can be studied.

Currently, after operating for 3 years, the database project has gathered information from over 53,000 people. Recently, in addition to reaching their intermediately goal of "whole-genome sequencing of a thousand individuals and whole-genome typing for ten thousand individuals", the members of the biobank team have successfully identified a precise predictive model for diabetes of Taiwanese people.

The presentation was modulated by Academia Sinica Vice President Chien-Jen Chen and presented by Dr. Chen-Yang Shen, Research Fellow of the Institute of Biomedical Sciences Academia Sinica and the Chief Executive of Taiwan Biobank. The Taiwan Biobank is accessible to biomedical researchers and information collected in the database includes biospecimens, blood, urine, DNA, dietary patterns, lifestyle, and family history of diseases.

Dr. Shen said that since September 2014 the Taiwan Biobank has initiated more than twenty research projects to try to find the reasons for common Taiwanese diseases. Recently the team has focused on diabetes, the fifth top cause of death in Taiwan. They detected 41 loci significantly associated with genetic susceptibility to type II diabetes, and developed a predictive model for type II diabetes for Taiwanese people based on these loci as well as other risk factors, such as obesity and smoking. In the future, this model will help doctors assess the risk of diabetes in individuals, lower the cost of medical care, and help government to make effective health policy.

In addition to the predictive model, Taiwan Biobank has reached their intermediary goal of "whole-genome sequencing for a thousand individuals and whole-genome typing for ten thousand

individuals". Whole-genome sequencing and whole-genome typing is critical for genomics-related research, as it shows the genetic uniqueness of local people; however, such research is currently very expensive. In contrast to other countries, the Taiwan Biobank decided early to share whole-genome sequencing and typing data with Taiwan academic community.

Over the past few years, with the convenience of their mobile data collection unit, Taiwan Biobank has been able to expand their services to remote mountain and seashore areas of Taiwan. The first off-island cooperative partner, a branch of the Tri-Service General Hospital located in Penghu, has also now become the twenty-ninth station of the Taiwan Biobank.

Related website: http://www.twbiobank.org.tw