

GENERATION CHALLENGE PROGRAMME
Proposed Members of the Program Advisory Committee

MAARTEN KOORNNEEF

Dr. Koornneef is a citizen of the Netherlands and received Msc. and Ph.D. from Wageningen Agricultural University in 1974 and 1982, respectively. He served as a plant breeder for Vandenberg Seeds Ltd. Naaldwijk, The Netherlands early in his career, then moved steadily up the ranks in the Department of Genetics at Wageningen University to full professor. He currently holds a joint appointment at Max Planck Institute as the Director of Plant Breeding research.

His research interests include the genetic analysis of complex traits such as flowering, photomorphogenesis, seed dormancy and plant performance. The genetic analysis involves the identification of loci involved in such processes using mutants and natural variation and the physiological and molecular characterisation of some of the loci involved. In the past his group isolated and characterised many mutants involved in the biosynthesis or mode of action of the plant hormones abscisic acid (ABA) and gibberellins (GAs), photoreceptors and flowering time. Currently they are using natural variation present among the many Arabidopsis accessions that can be found in nature as another source of genetic variation. For this they developed mapping populations derived from crosses between Arabidopsis accessions (also called ecotypes) and perform QTL (Quantitative Trait Loci) mapping, and cloned of the respective genes with major effects by map based cloning.

He is the recipient of numerous prestigious awards. In 1997 was elected as member of The Royal Netherlands Academy of Arts and Sciences and in 1998 he was elected as foreign member of the National Academy of Sciences of the USA.

MARIANNE LEFORT

Dr. Lefort is a geneticist with INRA, the French National Institute for Agronomy since 1979. She holds DEA and doctorate degrees in quantitative genetics. She has conducted original research on rapeseed and maize. Her research focus has been on analysis, quantification and prediction of heterosis; methods for selection of hybrid varieties; germplasm conservation. She also emphasizes the use of molecular markers for assessing genetic determinism of complex characters as well as for evaluating and managing plant genetic diversity.

In 1994, Dr. Lefort helped with the coordination of national activities dealing with genetic resources, as the Director of the French Board for Genetic Resources (BRG). During a 5-year mandate, she encouraged the development of research on methodologies for genetic resources management, predominantly in plant and animal sectors; established a National Charter for the management of genetic resources, with the help of public and private institutions; and actively participated in the debate concerning the International Undertaking on Plant Genetic Resources for Food and Agriculture.

Since 2000, Dr. Lefort heads the Genetics and Plant Breeding Department at INRA. She and her new team promote scientific policy in four areas: (i) preserving, analysing and managing the biodiversity of cultivated species and their related species; (ii) understanding plant genomes and their functions in order to explore and exploit their genetic potential (genomic, biological and informatic resources; genetic, physiological and molecular determinants of target functions and characteristics, for major cultivated species); (iii) developing methods and concepts for creating novel plant material; (iv) anticipating and assessing the impact of new varieties; elaborating rules for managing their cultivation.

JOHN MUGABE

Dr. Mugabe is a Kenyan national who received his undergraduate degree in agriculture from the University of Nairobi. John Mugabe holds a doctorate degree in environment and technology policy (with emphasis on technological capability for biodiversity conservation) from the University of Amsterdam, The Netherlands. He was a Ph.D. Research Fellow of the United Nations

University Institute for New Technologies (UNU-INTECH).

He is currently Science and Technology Advisor to the New Partnership for Africa's Development (NEPAD) and Secretary, NEPAD's African Ministerial Council for Science and Technology. He is the immediate former Executive Director of the African Centre for Technology Studies (ACTS). He served as Programme Officer of the International Diffusion of Biotechnology Programme of the International Federation of Institutes of Advanced Study (IFIAS), and directed the ACTS Biopolicy Institute in Maastricht, The Netherlands. He has served as a member of Kenya's National Council for Science and Technology (NCST), member Board of Directors of the African Conservation Centre (ACC), Kenya, and member of Board of Trustees of Sustainable Agriculture Centre for Research and Development in Africa (SACRED). He serves on the International Curriculum Advisory Committee of the Leadership for Environment and Development (LEAD) International Inc., Imperial College, UK., and has consulted for many international agencies and countries. His research interests include biodiversity conservation, technology policy and institutional issues related to sustainable development. He has published on biodiversity, biotechnology, environmental policy and institutional arrangements for environmental sustainability.

WAYNE POWELL

Dr. Powell is currently Head of School of Agriculture and Winery at the University of Adelaide, SA, Australia. He was formerly Director of Research at the Scottish Crops Research Institute. He was educated in the UK, receiving his undergraduate degrees from the university of Wales and his Ph.D. and D.Sc. from the University of Birmingham.

He has an outstanding research record that is diverse and fully compatible with the focus of the Generation Challenge Programme. His research interests have focused on the inter-play between plant genetics, cereal breeding, genome science and population genetics, biodiversity and conservation of genetic resources. He has been a leader in the fields of structural and functional genomics of cereals, DNA diagnostics to support molecular breeding strategies for trait introgression, map-based identification of novel gene function, linkage disequilibrium mapping and association genetics, factors determining patterns of genetic variation in natural plant communities, and the application of genome science to crop improvement.

Dr. Powell has held a number of senior research management and leadership positions. He has been in a leadership role in a number of significant international collaborations, has held important editorial positions, and has served on numerous reviews within and outside the CGIAR.

QIFA ZHANG

Dr. Zhang Qifa, born in Gong'an County, Hubei Province, China, on December 19, 1953, is plant geneticist and molecular biologist. He graduated from Huazhong Agricultural College in 1976 and earned his Ph D in genetics in University of California at Davis, USA, in 1985. He is currently a professor of Huazhong Agricultural University, Dean of the College of Life Science and Technology, and Director of the National Key Laboratory of Crop Genetic Improvement.

He systematically analyzed genetic diversity of world barley, which revealed a number of important characteristics of the distribution of genetic diversity, based on which he proposed independent origins of Oriental and Occidental cultivated barley. His group conducted extensive molecular studies of heterosis in rice, including demonstrating the relationship between molecular marker heterozygosity and heterosis, characterization of the genetic basis of heterosis, and made the proposition of epistasis as the genetic basis of heterosis. His group also constructed high-density molecular linkage map of rice and mapped over 20 important major genes and a large number of genes for agronomic traits. His group developed, using molecular techniques, bacterial blight resistant restorer lines of hybrid rice, quality improved male sterile line, and transgenic rice with delayed senescence and improved yield potential.

His professional career spans classical plant breeding through molecular genetics to research management and policy. He was elected to the Chinese Academy of Sciences in 1999, and to the

Third World Academy of Sciences in 2000. He has served on the Rockefeller Foundation Rice Biotechnology Science Advisory Board.