

1909 The International Cotton Genome Initiative: Opportunities and Challenges

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The International Cotton Genome Initiative (ICGI) was conceived at the dawn of this century by a group of cotton scientists and industry representatives who envisioned a need of expanded genomic resources and researches for sustainable cotton genetic improvement through enhanced collaboration and coordination that become necessary in much of the contemporary genomic research. This organization is desired in part because cotton is the only major crop that does not have an international research center to facilitate such collaboration and coordination. Over the past several years, ICGI has established its mission to increase knowledge of the structure and function of the cotton genome for the benefit of the global community. ICGI has facilitated numerous formal and informal collaborative research projects through increased communications and collaborations among the global colleagues in its five workgroups: Structural Genomics, Functional Genomics, Germplasm and Genetic Stocks, Evolutionary and Comparative Genomics, and Bioinformatics. Genomic resources such as DNA markers, EST unigenes, genomic clones, and genetic stocks are exchanged and the related information including DNA sequence is shared among the global cotton community. Currently, ICGI has representation of more than 500 cotton scientists and industry representatives from 33 countries around the world. There is a strong desire to realize in cotton the potential for many of new genomic technologies such as integrated genome mapping and sequencing. Thousands of cotton genes are to be identified for detailed functional annotation and comparison, which will be eventually translated to improved cotton cultivars via molecular breeding technologies. With rotating officers who are elected every two years and have a rich collection of scientific perspectives, ICGI and its workgroups are charged with building a broad base of resources for coordinated genome projects that are of great interest and mutual benefit.