Historically, mapping the genomes of crop plants by classical techniques has been a long, tedious, and time-consuming process. With the advent of isozyme studies, the pace quickened. With the use of RFLPs and RAPDs (restriction fragment length polymorphisms and random amplified polymorphic DNA), there has been an extraordinary—indeed, what might be termed explosive—acceleration of the mapping process. We are now witnessing this era of accelerated mapping.

However, while maps of RFLPs and RAPDs are both essential and powerful tools for the new thrust in genome mapping, for the most part they provide, from the perspective of the plant breeder, only a grid—a grid that is as yet empty, until traits of agronomic value have been located in the grid. The cooperation of breeders and geneticists in this endeavor is necessary to create maps that will be useful in crop improvement.

Lest we lose sight of the obvious, it needs to be said that the very reason for funding genome mapping has been to benefit the historic agricultural community. For the development of useful maps, it is most important that the genome cartographer maintain a continuing interaction with crop breeders and geneticists. The Crop Science Society of America is an institution naturally suited to providing a forum for this dialog and to maintaining a continuing dialog and to maintaining the exchange of information across species lines. A symposium on crop genome mapping was organized and presented under the sponsorship of Divisions C-1 and C-7 at the annual meetings of the CSSA in Denver, CO, in 1991 to provide an opportunity for exchange of genome mapping information and for discussion of genome mapping by crop breeders and geneticists. In furtherance of this dialog and to provide a permanent record of this symposium, several of the participants have prepared papers for publication in Crop Science. These efforts are gratefully acknowledged and appreciated.

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