quency in the population, as was done in the Genaissance asthma study. This may be simplified by the tendency of SNPs to be inherited in blocks—something Orchid's Grant says reduces the number of SNPs that have to be assayed to predict the haplotype, making it "possible to design a SNP diagnostic that allows you to infer a haplotype." Grant thinks this will be the most likely form that future haplotype tests will take "if companies want to do things cost effectively and efficiently."

However, inferred haplotypes may be unacceptable in the clinical evaluation of patients' pharmacogenomic profiles. Variagenic's Dykes points out that the best available algorithms achieve a success rate of only 80–90% in correctly assigning haplotypes to individuals based on SNP data, falling dramatically for more complex haplotypes. "I can't imagine this level of accuracy being acceptable to pharmaceutical companies or the FDA," says Dykes. Although it is possible to unambiguously assign haplotypes to some individuals using SNP data, he says, molecular haplotyping would be necessary to unequivocally identify previously unidentified haplotypes present in individuals.

Sylvia Davidson

Estonian parliament considers genome law

A draft act on human genome research was introduced in Estonia's Parliament on 20 September. The act is designed to win public support for the Estonian Genome Project (EGP) by ensuring that genetic information cannot be misused.

Planning of the EGP began in March with an agreement between the Estonian government and the Estonian Genome Centre Foundation (EGF), a non-profit body founded in January 1999 by Estonian scientists, doctors, and politicians to support genetic research in Estonia. It is hoped that combination of Estonia's relatively homogeneous population with its detailed health records will allow identification of genes involved in common diseases.

EGP plans to spend the next 10 years creating a database of health and genetic data from 70% of Estonia's 1.4 million population. Details about an individual's health and lifestyle will be combined with high-density SNP maps (100,000 SNPs per individual) from blood samples to enable whole-genome association studies based on linkage disequilibria.

The estimated cost of the project is between $100 million and $150 million, two thirds of which the government hopes will come from international financing. A for-profit subsidiary will be set up to sell access to the database, and it is hoped the EGP will boost Estonia's fledgling biotech industry, increasing the number of people working in the public and private gene technology sector from about 300 to between 500 and 700 in the next 5 years.

Unlike the genome project in Iceland (*Nat. Biotechnol.* **17**, 407), which is focused on diseases common in Icelanders, the EGP plans to elucidate genes involved in diseases prevalent throughout Europe, such as cancer and asthma. In addition, the Estonian database will be owned by a non-profit foundation to be formed by the Estonian government, and participation in the project will be on a purely voluntary, opt-in basis. Moreover, participants will have the chance to learn about their own risks of developing certain diseases—something that is hoped will help the development of Estonia's health-care system, which was neglected under the soviet regime and has not recovered since the country regained independence in 1991. However, all information in the database will be coded and each donor has the option at any time of decoding the data to make it impossible to identify the source.

But much of the success of the EGP depends on Estonian citizens. So far, there has been little opposition to the project, but neither has there been a wide public debate on the matter. "To get trust among the public and enough volunteer gene donors is the biggest problem at the moment," said Andres Metspalu, one of the creators of the EGP, during the Gene Technology Forum held in Tartu, September 21–22.

According to the act currently under parliamentary consideration, citizens can consent to donating genetic material for the EGP only after receiving extensive information about the processes involved and data to be generated. Discrimination on the basis of a person's genetic risks and DNA profile will be prohibited. The Minister of Social Affairs Eiki Nestor says he expects the act to be approved before the end of the year, allowing a pilot project involving 10,000 volunteers to begin early in 2001.

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