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**CASE STUDY: Patenting Human Genes**

**ACTIVITY:** You will be assigned one of four interest groups, HUGO, Myriad Genetics, AMA, and CGS. As members of these groups, you will understand yourselves to have been called to give testimony concerning Myriad’s BRCA patents to a legislative committee. The HUGO and Myriad Genetics are groups in favor of human genes patenting while AMA and CGS are groups against human genes patenting.

After reading the general background and the background for your group you will write your arguments in support of your group’s position. Be prepared to explain and defend your group’s view in class. No matter which group you are assigned into, you should articulate what you take to be the strongest arguments in favor of the position of your assigned group. All group members should participate in the presentation. As you prepare your presentation, you might find it useful to consider arguments likely to be made by opposing groups.

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**Group 1: Human genome Organization (HUGO)**

Human genome Organization (HUGO) was established in 1989 as an international organization, primarily to foster collaboration between genome scientists around the world. One of the many HUGO objectives is “ to sponsor factually-grounded dialogues on the social, legal, and ethical issues related to genetic and genomic information and championing the regionally-appropriate, ethical utilization of this information for the good of the individual and the society” HUGO believes that patenting DNA sequences may reward routine scientific discoveries. Patenting provides the necessary incentives for the ongoing development of products without interfering unduly with scientific research. However, it stands firm against patenting DNA sequences obtained by sequencing before the biological function has been discovered. HUGO also believes that licensing should be facilitated so more people are able to negotiate with patent holders and benefit from the use of patented sequences. In this way, both the patent holder can benefit from the licensing fees and a monopoly over the sequences can be avoided. As a representative of HUGO, you will argue that gene patents are appropriate and justifiable, and that the BRCA patent should be upheld. However, you should also recommend that such patents include a research exemption that permits researchers to use patented genetic materials without impedence.

**Group 2: Myriad Genetics (BRCA)**

Myriad Genetics is the corporation that owns the patents for the human genes BRCA1 and BRCA2 as well as the methods for identifying sequence mutations as indicators for a high likelihood of breast cancer. Myriad’s patents establish it as the sole source of the test to inform patients of their genetic risk of developing breast cancer. As a representative for Myriad, you will defend the validity of the BRCA patents, urging that such patents are a good way to promote research, and that isolated gene sequences are different from genes in their natural state and therefore are not excluded from eligibility for patent protection.

**GROUP 3: American Medical Association (AMA)**

American Medical Association (AMA) is a private, voluntary non-profit organization of 240,000 physicians and medical students, who practice in all states and all fields of medical specialization. The AMA was founded in 1847 to promote science and betterment of public health. From its inception, the AMA has maintained a Code of Medical Ethics, including a set of core Principles and a Code and Opinions applying those Principles. In the mid-1990s, the American Medical Association amended its Code of Ethics to forbid doctors from patenting medical procedures because it found that these patents compromised patient care. Since that time, the AMA (with other medical and scientific groups) has issued numerous statements regarding the need to avoid having gene patents interfere with appropriate medical care and the development of better medical treatments and technologies, and declaring unethical any limitations on the dissemination of medical knowledge. Patents are not needed to create an incentive for the discovery of human genes, and patent law does not exist to reward such scientific and medical discoveries. Rather, they must remain “free to all men and reserved exclusively to none,” both to meet shared ethical commitments and to foster further scientific discovery and more rapid sequential innovation.

**Group 4: Center for Genetics and Society (CGS)**

The Center for Genetics and Society (CGS) is a nonprofit information and public affairs organization working to encourage responsible uses and effective societal governance of the new human genetic and reproductive technologies. We work with a growing network of scientists, health professionals, civil society leaders, and others. The Center supports benign and beneficent medical applications of the new human genetic and reproductive technologies, and opposes those applications that objectify and commodify human life and threaten to divide human society. The Center works in a context of support for the equitable provision of health technologies domestically and internationally; for women's health and reproductive rights; for the protection of our children; for the rights of the disabled; and for precaution in the use of technologies that could alter the fundamental processes of the natural world.