

and social concerns are integrated into the laboratory exercises and students learn to identify commonly shared values of the scientific community as well as increase their understanding of issues of personal and public concern.

**Teacher Workshop Training:** Seminars for biotechnology instructors to improve, upgrade, and update their understanding of current technology and laboratory practices, with emphasis on curriculum development in current topics in ethical, legal, and social issues in science.

**Sabbatical Fellowships:** For community college instructors to provide investigative and field experience in research laboratories. During the fellowship, teachers also assist in development of student summer research activities.

**Summer Faculty-Student Teams:** Post-fellowship faculty and biotechnology students who have finished their second year of study team on a research project.

## Genome Educators

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Genome Educators is an informal network of educational professionals who have an active interest in all aspects of genetics research and education. This national group includes scientists, researchers, educational curriculum developers, ethicists, health professionals, high school teachers and instructors at college and graduate levels, and others in occupations affected by genetic research.

Genome Educators is a unique collaborative effort dedicated to sharing information and resources to further understanding of current advances in the field of genetics. Seminars, workshops, and special events are sponsored at frequent intervals. Genome Educators maintains an active World Wide Web site (URL: <http://www.lbl.gov/Education/Genome>). This site contains a calendar of events, directory of participating genome educators, and information about educational resources and reference tools. Participating genome educators may publish articles and talks of interest at this site. In addition, a monitored discussion group is maintained to facilitate dialog and resource sharing among participants.

## Getting the Word Out on the Human Genome Project: A Course for Physicians

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Progressive identification of new genes and implications for medical treatment of genetic diseases appear almost daily in the scientific and medical literature, as well as in public media reports. However, most individuals do not understand the power or the promise of the current explosion in knowledge of the human genome. This is also true of physicians, most of whom completed their medical training prior to the application of recombinant DNA technology to medical diagnosis and treatment. This lack of training prevents physicians from appreciating many of the recent advances in molecular genetics and may delay their acceptance of new treatment regimens. In particular, physicians practicing in rural communities are often limited in their access to resources that would bring them into the mainstream of current molecular developments. This project is designed to fill two important functions: first, to provide solid training for physicians in the field of molecular medical genetics, including the impact, implications, and potential of this field for the treatment of human disease; second, to utilize physicians as informed community resources who can educate both their patients and community groups about the new genetics.

We propose to develop a flexible, user-friendly, interactive multimedia CD-ROM designed for continuing education of physicians in applications of molecular medical genetics. To initiate these objectives, we will develop the design of the CD and will produce a prototype providing a detailed presentation of one of the four training areas. These areas are (1) Genetics, including DNA as a molecular blueprint, chromosomes as vehicles for genetic information, and patterns of inheritance; (2) Recombinant techniques, stressing cloning and analytical tools and techniques applied to medical case studies; (3) Current and future clinical applications, encompassing the human genome project, technical advances, and disease diagnosis and prognosis; and (4) Societal implications, focusing on approaches to patient counseling, genetic dilemmas faced by patients and practitioners, and societal values and development of an ethical consensus. Area (2) will be presented in the prototype.

The CD format will permit the use of animation, video, and audio, in addition to graphic illustrations and photographs. We will build on our existing base of computer generated illustrations. A hypertext glossary, user notes,