(at Davis), the admissions committee did consider race and ethnic origin in mitigating low test scores and undergraduate records."

That the Yolo County judge has decided, violates the equal protection provisions of the 14th Amendment. UC is expected to appeal the ruling.

(The DeRonde decision would be similar to one handed down about a year ago in which the special admissions program at the UC Davis medical school was declared unconstitutional. UC has appealed that decision to the California Supreme Court, which is slated to consider the case next month.

(Reidharr said that if the state Supreme Court reverses the lower court decision and rules the medical school's special admissions program lawful, he "would expect the same result in the DeRonde case.")

Forbidding consideration of ethnic origin or race in the admissions process at Davis, as the Yolo decision does, would alter, if not eliminate, the minority recruitment program there as well as special admissions programs at other law schools.

If that happens, however, it will not be for quite some time. Meanwhile, there is one UC law school, Boalt Hall, where the size of the special admissions program is being reduced. Student leaders say it is a step toward wiping out the entire program; UC officials say it is not.

Within the last year, the Boalt administration and faculty decided, according to Michael E. Smith, dean of admissions, to reduce by one-half the number of Chinese-Americans in the special admissions program and "to eliminate altogether Japanes-Americans from the program."

The reason, Smith said, is that "Chinese and Japanese are now being admitted and are enrolling at Boalt in a higher proportion vis-a-vis the regular program than white students."

Also, he said, it was "found that although Japanese and Chinese are less well represented in the legal profession than whites, the gap would be made up quite rapidly, particularly in the case of the Japanese." Furthermore, he said, "if you look at the census data like median income, the percentage (of people) below the poverty line and the proportion of people who have graduated from college, and other indications of educational and economic status, the Japanese are better off than whites.

"The Chinese below the poverty line are somewhat worse off than whites but a hell of a lot better off than blacks."

The Boalt Hall Asian-American Law Students Assn., in a letter to Assemblyman John Vasconcellos (D-San Jose), sharply disagreed with these arguments.

"One of the primary reasons minority admissions was established was to provide badly needed representation in ethnic communities," the letter stated.

"The legal needs among poor and low-income Asians are as severe now as they were when the program was instituted. Asian admissions is essential to community development."

By eliminating Japanese-Americans, and cutting back the number of Chinese-Americans, the percentage of special admission students in this fall's entering class will drop from between 24% and 25% to 22.5%.

Instead of dropping the percentage of special admission students, a Boalt Hall official was asked, why not keep it at the 25% level by increasing the number of blacks and Mexican-Americans? (By all accounts these two groups remain underrepresented in the pool of qualified regular students and in the legal profession.)

The official said that had not been considered by the faculty.

Student association president Raikin says he is convinced "there is now a plan afoot to wipe out the entire special admissions program. They are picking on the Asians first because of the economic conditions they cite. They are trying to see how it floats politically.

"If they get away with it, they are going to do away with the whole thing."

Smith, however, says that as far as he is concerned that is not the case.

The education subcommittee of the Assembly Ways and Means Committee apparently is not so sure. Vasconcellos, its chairman, has called a special hearing later this month on this and related issues involving Boalt Hall's special admissions program.

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The Genetic Engineers Still Await Guidelines

By TABITHA M. POWLEDGE

Just about a year ago 140 molecular biologists met at Asilomar, a conference center on California's Monterey Peninsula. Because the meeting involved a group of exceptionally high-powered and competitive scientists attempting to regulate themselves before expanding a new line of research, it was an event rare in the history of science. In four days, the scientists agreed, voluntarily and almost unanimously, to a set of severe and cumbersome safety restrictions on their work.

That work involves recombinant DNA, as the transfer of genes from one organism to another is called. Such research has been in something of a limbo since July 1974, when a handful of extremely well-known molecular biologists asked their peers to stop doing these experiments until some of the risks could be assessed.

Among the sources of concern was their fear that the laboratory strain of Escherichia coli, a close relative of a bacterium that dwells in the human intestinal tract, might be genetically engineered to possess antibiotic resistance or a cancer-causing gene, and that this newly virulent bug might get loose among lab workers or even in the general population. It was and is feared that other dangers, which cannot for the moment be foreseen, may also exist. There has been a general feeling that it may be sensible to err on the side of safety.

Since Asilomar, the director of the National Institutes of Health, the government body that either conducts or funds most of this country's medical research, has been considering the proposed guidelines, including an assortment of possible modifications. The N.I.H. held two days of hearings last week to consider research rules, and expects to adopt firm regulations sometime this spring, though leaving room for further changes. Because much of the work will be done with government money, it seems reasonable to anticipate that the government will have a lot to say about how the research is conducted.

Why Take the Chance?

If the research is potentially dangerous, why do it at all? Because it is also potentially beneficial to an extraordinary degree. Some of the benefits are likely to be medical, hence in the N.I.H.'s interest. Genetic engineering may offer an opportunity for therapy of genetic diseases for which only symptomatic relief is currently available. For instance, sickle-cell anemia results from a defect in the structure of hemoglobin, the blood component that carries oxygen. It may prove possible to supply victims of this disease with the genetic equipment for the manufacture of normal hemoglobin.

Two other developments could also enhance medicine's capacity to deal with disease. According to Robert Sinsheimer, chairman of the California Institute of Technology's division of biology, "it is very probable that in time the appropriate genes can be introduced into bacteria to convert them into biochemical factories for producing complex substances of medical importance; for example, insulin (for which a shortage seems imminent)" and human growth hormone. In addition, "gene manipulation opens the prospects of constructing bacterial cells, which can be grown easily and inexpensively, that will synthesize a variety of biologically produced substances such as antibiotics," in the opinion of Stanley N. Cohen, associate professor of medicine at Stanford.

And Nobel laureate Joshua Lederberg envisions being able to manufacture in the lab antibodies—the complex molecules that fight disease organisms and other "foreign" substances—to such illnesses as malaria, schistosomiasis and tuberculosis. One could then administer the antibodies directly to the population in mass programs, which would offer many advantages over vaccination, in which the body is stimulated to manufacture its own antibodies to a disease.

It seems likely, however, that these therapeutic applications may be less important than commercial ones. General Electric is reportedly trying to patent a genetically engineered bacterium that eats oil. A number of naturally-occurring strains of Pseudomonas devour individual components of petroleum, but G. E. researcher Ananda Chakrabarty has managed to combine the abilities of a number of those bugs into one new, man-made strain that likes them all. The company is thinking about marketing such bacteria in powder form, for use on oil slicks, or mixing them with straw for application to oil spills. Chakrabarty has also worked on a bug that will be able to extract precious metals like gold and platinum from waste substances.

Agricultural Potentials

Food production is also an area of potential use for genetic engineering. According to one published report, a researcher has applied for a grant to transplant a cow gene into a bacterium to make it manufacture prorennin, a curdling substance found naturally in the cow's stomach. The researcher would thus have invented a new, and cheap, way of making cheese.

Another scientist is reportedly spending $140,000 from the National Science Foundation trying to transplant a nitrogen-fixing gene into a carrot, and many similar projects are in progress, including one at General Electric. Such genes occur naturally in legumes (such as peas and beans), the group of plants that get the nitrogen they need for growth from the air, rather than from fertilizer. If such genes could be transferred to non-leguminous plants, perhaps the world could be fed more cheaply, without heavy reliance on artificial fertilizers, and without pollution from fertilizer runoff.

These promising industrial and agricultural tools, however, may also present unknown dangers. Military applications are also a possibility. They all increase the problems of social control of genetic engineering.

Many mechanisms for regulation of medical research already exist (far too many, in the eyes of some medical researchers). A powerful weapon in such regulation has been the fact that the regulators hold the pursestrings.

No such tool is available for the control of research in industry, where private funds support the work. Some of the techniques are not exceptionally difficult or expensive. Nor is there, in industrial research, the same degree of shared information that one finds in public science. On the contrary, there are powerful commercial reasons for keeping current work secret until ready for marketing, and very little in the way of remedy for that sort of industrial secrecy. Similar conditions apply in military research.

Even if the N.I.H. adopts strict guidelines, it is hard to see how they will apply—except perhaps morally—to such other government areas as the Defense Department, or to private research. The greatest need for regulation may really lie elsewhere: outside of N.I.H., outside the biomedical community, and outside of any regulatory procedure yet devised.

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