

Science for the People  
Asilomar statement  
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OPEN LETTER TO THE ASILOMAR CONFERENCE  
ON HAZARDS OF RECOMBINANT DNA

In recent years we have witnessed the rapid development of unusually potent biological technologies. This conference has been called to consider the public and occupational health hazards inherent in one of these technologies, the linking together of DNA molecules across natural species barriers. Regardless of how slight the current hazards of introducing man made hybrid microorganisms into the environment appear at the moment, the hazards of such activities are unknown and possibly great. We have seen how technologies which appeared completely beneficial at the time of their introduction have become ~~into~~ intentionally or accidentally destructive of human life and the environment. Molecular biologists are in a position to benefit from the lessons of our technological present and not contribute to the inventory of tragic results already caused by, for example, radium, asbestos, thalidomide, vinyl chloride and dieldrin.

There are even broader social issues that must be considered. The growing preoccupation with technologies involving genetic manipulation, and parallel developments such as cell fusion and in vitro fertilization, all point to the application of these techniques for human genetic manipulation. Technology and scientific development, even when labelled biomedical, is not intrinsically socially beneficial. Specifically, technologies pointing to the modification of human genetic material must be examined with the greatest care to understand why they are being so eagerly developed, and for precisely whose benefit.

Decisions at this crossroad of biological research must not be made without public participation.

There is little evidence that the technologies being discussed at this meeting arise from social or medical needs of large segments of the population. Rather, they represent specialized interests including those of the scientific community itself. The consequences are that experiments that happen to be conceived, get done, regardless of whether or not they should be done. The public rationale for

these rapid developments in genetic engineering generally involves positing hope for individuals suffering from rare genetic diseases. In fact, considerable risk may be taken by clinicians eager to apply advanced knowledge to effect new cures. However, the search for such dramatic cures often diverts attention from the massive health needs of the population as a whole and the need to prevent the epidemics of our time, such as environmental and industrial carcinogenesis, malnutrition and coronary heart disease.

The dangers inherent in the new technologies mandate some regulation of their development. We do not believe that the molecular biology community, which is actively engaged in the development of these techniques, is capable of wisely regulating this development alone. This is like asking the tobacco industry to limit the manufacture of cigarettes. Although we could imagine a scientific community in which the spirit of social cooperation would be sufficiently developed so as to require no external regulation, this is not our case today. We have all had personal experience of the competitive and professional pressures which remove caution, prudence and a larger concern for social benefits, from the path of hazardous experiments. Scientific careers are not built solely on a concern for public health, for the well being of the underprivileged, or right action.

Since the risks and danger of these technologies are borne by the society at large, and not just scientists, the general public must be directly involved in the decision making process. Yet we see even in the structure of this conference that a scientific elite is here alone trying to determine the direction that such regulation should take. The presence of scientists from specialized government agencies is an important input in this discussion, but not a sufficient one.

The moratorium was called until attempts have been made to evaluate the hazards and some resolution of the outstanding questions has been achieved. These conditions still have not been met. From scientists should come the initiative to open and create areas of participation in order to achieve a resolution to these

questions in a socially balanced manner. This has not been done and should be done as soon as possible. So far the lead has come from people who are beginning to organize their priorities in science and technology in order to define and implement options that will affect present and future societies, very differently than those conceived by scientific experts alone.

In our efforts to listen to people outside the scientific establishment, we offer five proposals:

1. Involve those most immediately at risk - technicians, students, custodial staff, etc., in collective decision making on safety policy for the laboratory
2. Integrate into the curriculum of biology and medical courses the social implications of present and future biomedical research.
3. Require social and environmental impact statements on the means and goals of biological research projects.
4. Continue examination of these matters at public sessions of scientific meetings.
5. Expand participation in the advisory committee of the National Institutes of Health requested by the moratorium. The N.I.H. could be the structure through which the involvement of non-scientists in decision making could be implemented.

Since the original call for the moratorium, 7 months ago, the outstanding questions posed by it have become even more relevant, given the number of university laboratories and commercial interests that are preparing to work with artificial recombinant DNA molecules and their applications. Clearly at least the minimal prudence of the moratorium should be continued until the above proposals are put into meaningful effect.

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