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DEPARTMENT OF BIOCHEMISTRY

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January 5, 1979

Senator Harrison Schmitt
United States Senate
Washington, D.C. 20510

Dear Senator Schmitt,

Please forgive me for the delay in answering your letter of November 8 asking my views on Senator Stevenson's intention to introduce legislation next year to regulate recombinant DNA research. I left for a nearly month-long trip to Japan shortly after your letter arrived and the accumulated chores and obligations that greeted my return kept me from responding sooner.

Lest there be any doubt about my views let me be quite direct: I am unalterably and unequivocally opposed to legislation, whether federal, state or local, that regulates research using recombinant DNA techniques. Such drastic and far-reaching action (or overreaction) is, in my view, unnecessary and, therefore, unwarranted. But, more importantly, I am concerned that such legislation and the inevitable bureaucracy it would engender, could cripple important biologic and medical research that have become reliant upon the recombinant DNA break-through. In attempting to guard against what were never more than conjectural and are now highly improbable and unrealistic fears, such legislation would require costly expenditures and procedures in a vain attempt to obtain the impossible: assurances of zero risk. For me and many others that price is too great, the cost-benefit ratio unacceptably high. As I see it the Nation would gain little from such legislation but the losses would be excessive. Instead of seeking new ways of regulating this field of science, I believe we should be exploiting, as vigorously as we can, the tremendous opportunities afforded by the recombinant DNA methodology. In doing so we should also be alert and ready to respond to any surprises that signal danger. But certainly we should not be erecting political and administrative barriers or bureaucracies that serve no useful purpose. Unfortunately, Secretary Califano is determined to do otherwise (See Nature's comments - enclosure 1 and the Federal Register December 22, 1978).

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As you well know creativity, intuition, knowledge and persevering effort are the hallmarks of first-rate science; the administrative edifice that has already been constructed to govern recombinant DNA research frustrates the first two and impedes the last. Having a cumbersome, inefficient and unresponsive bureaucracy, centered in Washington-Bethesda, controlling the design and performance of experiments is incompatible with effective research.

Interminable meetings of local committees that have too little understanding of the experimental details, opportunities or putative risks they must judge, consume scandalous amounts of time. Before experiments can be initiated to determine the significance or usefulness of promising leads, breakthroughs or hypotheses there are frequently months of review, discussion and paper pushing. And, if in the progress of the research some alteration in the protocol becomes necessary or advisable, further time-consuming consultations and deliberations are required. Is it any surprise that an increasing number of leading American scientists, have had enough of burdensome restrictions, and stultifying administrative demands; anticipating still worse times, some are turning to foreign laboratories for relief (see news clipping, enclosure 2). However one feels about the propriety of their decisions and actions, we can not escape the signal and its implications: Important science, research that society wants done and is paying for, will leave the United States to be done in a more hospitable setting. But what are the prospects for those scientists who do not have this option? Very likely, morale and enthusiasm will wane, the overall research effort will be eroded and the momentum generated by the recombinant DNA breakthrough could be dissipated. This may please the "less-knowledge is better" and environmentalist forces but for most it is a calamity we can ill afford.

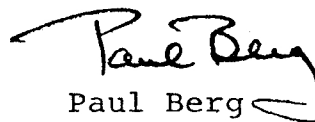
The recombinant DNA controversy has been and continues to puzzle me. Those of us who signed the 1974 "Moratorium" letter did so not because we were convinced of imminent danger or disaster (as it has often been misrepresented), but because we believed the issue needed to be raised, examined carefully and critically before, not after, proceeding full-speed ahead. But what began and should have remained principally a scientific issue, was captured and exploited by sensationalist journalists (see enclosure 1 for a recent example), by environmentalist and single-issue public interest groups who fail to consider the wider consequences of their own narrow-mindedness and by demagogic scientists and politicians who prefer to manipulate rather than understand the issues. For me and many of my colleagues this exercise in science and public policy has become nightmarish and disastrous.

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Rather than legislative or administrative actions to curb recombinant DNA research we need to look seriously at whether the unlikely risks that remain, warrant huge expenditures of money to support the present machinery that regulates recombinant DNA research. My own early concerns that some recombinant DNA experiments might carry risks have long been dissipated. The data, discussions and experience of the last four years have convinced me that our earlier concerns are no longer warranted. I now believe that Society has more to fear from the intrusions of government in the conduct of scientific research than from recombinant DNA research itself. Initially, I was full of hope, even optimistic, that we could act wisely and decisively to develop procedures that would promote research using this promising new tool and minimize or eliminate whatever risks that pertained. But from any vantage point, I see only a victory for the politicians of science rather than scientists. I and most of my colleagues are growing increasingly apprehensive of the outcome of such victories. To counter individuals and organizations promoting "Science for the People" we need "People for Science".

I greatly appreciate your invitation to state my views on this matter. I am sorry I could not do it sooner. I also wanted, particularly, to commend you on your science letter opposing oppressive legislation to control scientific research; it is reassuring to know that there are some in our government councils who share, through experience and understanding, our love for science. I often recall your statement that if you were reentering science today, biology would be your first choice. I'd be happy to fill you in and keep you abreast of developments in the recombinant DNA field should you decide its really not too late. Perhaps you'd be interested in some of the scientific happenings in our lab; A recent New York Times article summarizes some current work that will appear in Nature during mid January.

Respectfully,


Paul Berg

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Enclosures