STANFORD UNIVERSITY MEDICAL CENTER

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STANFORD UNIVERSITY SCHOOL OF MEDICINE
Department of Genetics

June 1, 1971

Dr. William F. Raub
Special Research Resources Branch
Division of Research Resources
National Institutes of Health
Bethesda, Maryland 20014

Dear Bill,   Re.: Grant No. RR-00311-06

The annual report and continuation proposal for the ACME project
is in university administration channels and should be in the mail to
you very shortly if not already. I thought I would take the occasion
to send you a couple of copies for your advanced notice and to make
some further comments on where we stand at the present time.

The report documents in some detail the technical accomplishments
of bringing ACME up to a reliable time sharing computer service. We
can I think take substantial pride in the work done by a very competent,
dedicated, and knowledgeable team. We also know that we have educated
literally hundreds of medical research investigators and potential care-
providers with the skill and insight needed to exploit this tool in the
future. But we also appreciate very well the need to move on to new bases
for the conceptualization and support for the medical school computer
system. The planning efforts that we started about two years ago did not
come to a sharp focus until recently for a number of reasons. These
included fluctuating uncertainties about patterns of funding for research
projects that might be users of computer facilities, turnover of key
personnel in the Stanford computer center and some indecision on our own
part about sponsoring new kinds of medical information system studies.
The last, in turn, was of course complicated by our being caught
between deans.

As you know, a number of concrete, modestly large scale programs
have been identified and will proceed as major projects under the ACME
framework - for example, we hope, Stan Cohen's drug interaction project,
and my own work with DENDRAL. However, the general economic and technical
climate for computing has also been undergoing rapid change and had we
made more drastic plans two years ago they probably would have been
obsolete at this moment anyhow.

Recently the Stanford computer center has undergone a dramatic re-
organization, accompanied also by the appointment of Professor William
Miller as the provost and academic vice president of the university.
Computer-related problems therefore now have an unusually high priority
of concern in the central councils of the university on the part of
knowledgeable people. We have then been able to implement what we aspired
to before, namely, a very detailed analysis involving the best expertise
of the Stanford computer center as well as ourselves in making further
plans. Such a study is actively under way, for example, towards a cost and

over

technical analysis of the benefits and disadvantages of mounting an
interactive, PL/ACME-based time sharing system on the Stanford campus
facility, the 360-67. This has the potentiality of furnishing
conversational computer services at considerable savings based on
economy of scale. However, it would also involve a substantial
investment of system effort in order to protect the multitudinous
users on the present ACME system from intolerable injury. It will
take us another three to four months to come to reasonable decision
points on this analysis. The most we can say at the present time
is that the feasibility and cost effectiveness of such a move are
not yet excluded.

If this would happen there would obviously be major structural
changes in the ACME system both from the standpoint of hardware and
the way in which we are organized to facilitate the use of computer
capabilities by the medical research community. We believe, however,
that the planning of the next generation system, one which would take
advantage of all that we have learned thusfar in furnishing reliable
computer capability, should be the principal new task to which we
address ourselves for the duration of the present grant. Indeed, we
feel obliged to request that you authorize an extention of fifteen
months from the present schedule date of termination in order to give
us a realistic opportunity to prepare an effective proposal for the
renewal of support on what may be a drastically modified basis. Any
attempt to implement alternative systems on a shorter time scale than
this would probably be more expensive in the long run and stand a large
chance of injuring and alienating a considerable number of our users.

Other system objectives are also outlined in the report. I would
particularly call your attention to the brief summary on pages 2-5.
We have in mind technical efforts to increase the feasibility of
computer communications involving, on the one hand, small laboratory
based machines within the school and on the other not only the major
center facilities on campus but also access to the national network now
being put together. It will be difficult, realistically speaking, to
make much headway on these efforts within the confines of our present
budget ceiling. We, therefore, hope to be able to negotiate with you
some basis hwereby direct grant funds from your office may be retained
for such development efforts, especially insofar as we may be able to
augment our utility revenues from user fees with progressively less
heavily subsidised rate structures during the next year or two.

In summary let me emphasize that, having now reached a point of
generally accepted technical excellence, we are very much concerned
about providing services on an economically feasible basis. The planning
and the changes themselves will, however, require further investment
which we believe should be amortized not only from local revenues but with
an appreciation for the overall impact of the progress of our program on
the state of the art available to health research generally.

    As I have already mentioned to you, the applications of computers are now very well represented in the university administration and I foresee a similar modernization of outlook with the impending appointment of a new dean of the school of medicine.

<div style="text-align:center">Sincerely yours,</div>

Joshua Lederberg
Professor of Genetics

JL/rr

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