

*This may interest you.*

12/18/69

A DOCTORATE IN ENVIRONMENTAL HEALTH AT STANFORD UNIVERSITY

*(to Stanford faculty)*

A proposal for your consideration by Prof. Joshua Lederberg, Dept. Genetics

A recent report by R. W. Miller (Lancet 1189 11/29/69) remarks that U. S. childhood mortality from leukemia has shown a definite improvement in the epoch 1960-66 compared to the previous decade. The reduction applies specifically to the peak at 5 years of age or less, a part of the incidence that is plausibly assigned to events that began during fetal life. Data of this kind are always subject to conflicting interpretations. A very plausible one is that about 1000 pre-school children have escaped having leukemia in consequence of the concern about prenatal exposure to x-rays that took hold during the last decade.

This report will receive minimal public attention compared to the headlines that would attend an announcement of a "cure" for leukemia that had been verified on 1000 cases.

This disparity is symptomatic of the distortion of attention away from issues of environmental health and towards reparative medicine; put another way, it illustrates the important gap between "health" and "medicine". Any student of contemporary affairs could produce a dozen more cogent examples.

Meanwhile, the School of Medicine is doing very little either to meet this challenge, or to advertise that others should. I would support the former alternative, and suggest that the medical school give the most serious thought to the ways that it can properly encompass a broader range of responsibilities in its teaching and research programs, as well as in its ministrations to human needs.

One proposal (of many that might be implemented in several areas) is a graduate program in environmental health. At this time, I suggest that this be viewed as a Ph. D. to be administered by interdepartmental committee. (Eventually, we may wish to consider the priority of a degree more patently parallel to the M. D., a professional "Doctorate of Environmental Health") Unlike prevailing offerings in "Public Health", the EH degree would be based on the same depth of basic sciences as the M. D. We might then also seriously consider enlarging the freshman class of the "medical school" to include a number of potential candidates for the EH degree. These do not have to be identified before about the middle of the 3rd year, i. e., the time when the student begins to make a major commitment to patient care in the M. D. program. We could also consider to recruit graduates who have already achieved the M. D. or other advanced degrees, as well as a joint E.H.-M.D. program.

Besides the basic medical sciences now taught here, the E.H. student should also have advanced courses in biometry, epidemiology, nutrition, the physics and chemistry of the biosphere, and techniques of instrumental analytical chemistry and environmental toxicology. He probably should also have some exposure to processes of government and other media of social policy.

Then he should do a dissertation on some highly focussed aspect of E. H. research. This will be the responsibility of individual professors. For example, I am thinking of seeking funds for a facility that could look at urine and other specimens from large numbers of people in looking for special metabolites -- these would be new evidence of genetic idiosyncrasy, of disease, or of exposure to peculiar environmental factors. Such a facility would be based on the work done by the Genetics-Instrumentation Research Laboratory for many years with NASA support for the development of computer-based instrumentation in gas-liquid chromatography and mass spectrometry. Other members of the genetics department are well equipped to examine interactions of environmental additives with DNA, or to screen for dominant lethal mutations or teratogenesis in animals. The medical school generally has unusual resources for research programs that could be related to this theme.

The next step would be simply to organize an interdepartmental committee that would seek authority to define and grant the Ph. D. in Environmental Health. While based primarily in the medical school, this will benefit a great deal from cooperation with other faculties in the university.

OFFICE MEMORANDUM • STANFORD UNIVERSITY • OFFICE MEMORANDUM

DATE: DEC 18 1969

To :

FROM : *Joshua Lederberg*

SUBJECT: Ph.D. in Environmental Health.

1. Would you favor me with your general reactions to this proposal?
2. Would you suggest any specific research areas that your or any of your identifiable colleagues might seriously consider for sponsoring dissertation work?

Can you think of any other role that you might wish to play in such a program?

PLEASE DISTRIBUTE THIS FREELY TO OTHERS OR SUGGEST NAMES OF WORTHY PROSPECTS FOR SOLICITATION.

*Joshua Lederberg*

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