

January 5, 1957

Prof. A. D. Hasler
Dept. Zoology

Dear Professor Hasler:

Jim Crow intimated you might be interested to have my impressions of Aaron Novick in regard to his prospective appointment.

This step has my most enthusiastic endorsement-- I will be very sorry in fact if it fails to be realized. I was astonished to learn that some of my colleagues thought I had said very little about this before owing to my lack of interest. To the contrary, I had taken it for granted that my liking and respect for Novick were so well known that they needed no emphasis.

Dr. Novick's training was in physical chemistry, but after the war he became more interested in biology and since then has made a number of important contributions, mostly in collaboration with Szilard. I know both Novick and Szilard fairly well as biologists: while Szilard unquestionably had an enormous formative influence, Novick has long since functioned as an equal collaborator and would be no less successful as an independent investigator. These contributions may be summarized:

1. Phenotypic mixing in phage. (When phages T2 and T4 are grown in the same host bacterium, the progeny T2 phage may still show the T4 phenotype.)
2. The design and engineering of the chemostat.
3. Its application to the first precise measurement of mutation rates in bacteria (or any other organism), and the study of the temperature characteristics. The same methodology was then used for the study of chemically induced mutation, and led to the discovery of a new phenomenon of anti-mutagenesis (i.e. the action of certain nucleosides to depress the 'spontaneous mutation rate'). This work has been of fundamental importance in dispelling the mysticism of 'spontaneous' mutation and relating it to determinate physical and metabolic events.
4. The discovery and analysis of 'periodic selection', an evolutionary process not earlier perceived in closed (microbial) populations.
5. The first precise kinetic analysis of photoreactivation, viz., the reversal of lethal effects of ultra-violet light by light of visible wavelengths.
6. Currently a kinetic analysis of enzyme formation, the most interesting aspects of which are just now coming to light (the persistence of different

states of enzymic induction among clones that have had a different history of exposure to inducing compounds.

Novick has had great difficulty in defining his status among biological even scientific disciplines. His most important contributions so far have been in genetics, but he does not tend to use the established methods of this field, and his present problem is somewhat removed from it. Instead, he is an imaginative worker, skilled with his hands, and accustomed to a systematic application of quantitative procedures, and acquainted with the gadgetry of physical experimentation. Perhaps this defines a 'biophysicist', but above all he has been a productive scientist in all of his interests, and a stimulating person to have as a colleague.

There has been some discussion, I understand, of his qualifications for a possible joint appointment in the physics department. Its members will have to be the judges of this: from an outsider's standpoint, I would hope they give as broad a construction as possible. More than anyone else on campus now, Novick would be able to communicate in their own terms with the biologists and the physicists. As to teaching activities, this should be discussed directly with Novick: for my part, I would think that a ~~listing~~ listing jointly in Zoology and Physics of something like "Elementary Biology from an Advanced Standpoint" (= the living organism as a physical entity) would be an exciting addition to our curriculum. A course like this should be open to students who have had an extensive background in physical sciences, and could use a compressed presentation of biological problems in their own terms. There are many physicists today who have a great interest in biology, and are facile theoreticians, but who are very sadly un- or misinformed about fairly simple biological phenomena. The same course should be of considerable interest to philosophically inclined, and more mature biologists, who would want to review their biology from this angle. I do not propose that Novick could immediately offer such a grand design right away from his own resources, but better than anyone else I could imagine he could organize such an offering with the cooperation of other people in various departments.

I have not discussed any such details with Novick, nor even whether he is especially anxious for a joint appointment. But I think it would be to the university's benefit if he were. At any rate before there are any final conclusions on this point, it might be well to interview him again with this consideration a definite prospect in mind.

Yours sincerely,

Joshua Lederberg
Professor of Genetics

CC: Prof Barschall.