August 6, 1965

Dr. D. D. Tunnicliff
Shell Development Company
Emerville, California

Dear Dr. Tunnicliff:

I was glad to see that your paper on regression analysis of mass spectra just came out in the last issue of Analytical Chemistry.

We did spend some time trying to adapt your 7040 program to the 7090. However, the problems of rewriting the externals seemed rather formidable, especially as we might then expect to find some other subtle bugs that would have to be ironed out before there was a complete conversion. We have therefore decided to put off our attempt to convert the program for the time being, although we are waiting for some further advice from some of our IBM contacts with respect to some instruction set conversion macros that may be floating about somewhere that would facilitate the rewriting of the externals. Meanwhile we have received a rather nice package of a multiple regression program that has been used rather widely, and with some satisfaction, wtsome of our colleagues at the University of Hawaii. This is also written for the 7040, but entirely in FORTRAN IV, and we therefore had relatively little difficulty in running it on our system, once the logical tape designations were straightened out. I was still astonished, however, to find some rather straightforward program errors in their card deck that had somehow gotten by their compiler but were flagged by ours. While that multiple revision program was not explicitly designed for analysis of mass spectra, its mathematical foundations are exactly the same as yours, and I think we will be able to make it do for our respective purposes.

In your paper you make some reference to the relative execution speeds of the 7040 and the 7090 with respect to your program. Was this based on a conversion, or is it a general calculation of instruction apeeds on the two machines?

Sincerely yours,

Joshua Lederberg
Professor of Genetics

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