

December 11, 1970

Professor Joshua Lederberg
Department of Genetics
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Dear Mr. Lederberg;

I am currently a senior Chemistry major at Kenyon College, in Gambier, Ohio. In my basic organic chemistry course last year, our professor, Owen York, Jr., introduced us to your DENDRAL-64 notational system. This year, as an Independent Study project, I decided to try to adapt the DENDRAL system to our IBM 1130 computer. Professor York supplied me with some of your articles (actually copies of reports to NASA) as an aid to the programming of this problem. I have Parts I, II, & III. of your five-part report, an article by yourself and six other gentlemen on "Applications of Artificial Intelligence for Chemical Inference", parts I & II, and the introductory report on the general outline of the DENDRAL system. These articles have been a great help in gaining a better understanding of what the DENDRAL program can and should do. However, I do not have copies of Parts IV & V of your NASA report, and these are the parts which seem to have the majority of the information included necessary for programming this problem. Therefore, I would greatly appreciate it if you could send me the following articles concerning your research into DENDRAL:

1. Part IV of your NASA report, entitled "Generator Algorithms."
2. Part V of the same report, entitled "Directions for Further Analysis."
3. Your article in Accounts of Chemical Research, which was in preparation at the time of the NASA articles.
4. Memo No. 62, Stanford Artificial Intelligence Project, February 1967, entitled "Heuristic DENDRAL: A Program for Generating Explanatory Hypotheses in Organic Chemistry.", by B. G. Buchanan and G. L. Sutherland.
5. A listing of the source program for the basic DENDRAL program.

I will be more than happy to pay for any copying and/or mailing cost incurred by you.

I think that creating a DENDRAL program for the IBM 1130 will be an interesting and instructional project, because the system that we have has only 8,192 16 bit words of core memory, and in one of the articles that I read, it is stated that the DENDRAL program uses approximately 40,000 words of memory. Fortunately, our system also has a disk memory unit on-line, where I have the possibility of about 200,000 - 300,000 words of storage. I greatly appreciate your attention and I will inform you if I achieve any success in adapting DENDRAL to a much smaller computer than it was originally run on.

Sincerely yours,



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