

\*WELCOMING ADDRESS: G. Bruce Dearing, President  
State University of New York at Binghamton

We find ourselves today trying to prepare for the operation of a 21st century institution and trying to solve and resolve the questions and the problems that we all must face, problems that are very different from those that perhaps any of us anticipated when we began our training.

I was once listed in a magazine as a literary man with a technocratic bent. This may amuse one of my former students, Peter Calingart, who I am told is here and whom I am eager to see. I am somewhat bent technologically, I think. I am persuaded that there is, in the enterprise to which you people are addressing yourselves, a real potential for the solution of problems that every college president and most college deans have been agonizing over for the past ten or fifteen years. One of these problems is the problem of making higher education broadly and democratically available. We have faced the recognition that, when higher education is no longer for the elite ten percent, but is intended to be, as it must be in the future, for some larger percentage, seventy-five or eighty, perhaps, it is simply not going to be possible to provide enough classrooms, professors, and other resources if we rely on our traditional modes of instruction to take care of this many people. There isn't that much money; there isn't that much training potential. We have to find some way of multiplying the efficacy of our trained people and of our scarce resources.

The second consideration is the matter of finding ways of addressing the problems of the disadvantaged. One of the things that I think we have all discovered of ourselves as we try special programs for those who have not necessarily an inferior life experience to ours, but a different life experience from that of most of us who have found ourselves moving smoothly through the kindergarten to the Ph.D. is that an even scarcer commodity than money is patience. Many of our disadvantaged have been facing the problem of being told in effect, "I can no longer take any more time with you; you are too stupid or you are too ill-trained; I won't go over that again." This feeling has been communicated even by people who are trying to be patient saying, "Haven't you got it yet?" Now one of the things about stainless steel is that it is very patient. I have been working and thinking for years about the problem of creating a kind of infinitely patient and infinitely accessible "mother-at-the-ironing board" to deal with such things as multiplication tables, for example. I guess I remember this situation because I had such a hard time learning them myself, and if my mother had not been so patient, I possibly would not have gotten through school. But there are many

\* It should be noted that Mr. Dearing's address, as well as Mr. Falkoff's and the panel discussion on July 12, has been transcribed from the taped recording and was not submitted as hard copy. Minor editing has been effected.

people who have not had the opportunity to learn those things which they must have in order to get into the mainstream of education, and we cannot teach it to them by our conventional means. We cannot simply say to somebody who has a high school diploma and actually something like a fourth grade education, "come in as a freshman and sink or swim as the other freshmen." There have to be some interface courses. There have to be some learning experiences that make it possible for those people to get into the mainstream of education. Here, it seems to me, programmed learning and particularly that made available by the computer through time sharing and multiple access and through such a language as this magnificent APL is a way perhaps of addressing this problem that we have fumbled so badly before.

So it seems to me that it is a very good omen indeed that this group, drawn from across the country and indeed from other countries, is meeting here at an institution which has had some experience with and has learned some things about the use of APL, to share experiences with one another and to look at the ways in which we can really make better use of this tremendously powerful tool that is newly available to us.

I look forward to a time in which it is not only possible for a Ph.D. candidate to substitute Russian for French or German or Anglo Saxon or Greek, but to substitute a computer language perhaps. Maybe one will have to take his Ph.D. orals after passing the APL exam instead of the French exam. But clearly we have encountered a problem of language. We have encountered, in our efforts on the campus to get more research and instruction done more efficiently, something like the problem that a husband faces when he tries to teach his wife or daughter to drive by beginning with the mysteries of carburetors, when we have tried to explain the mathematical inner workings of the computer and not begun at a place where it is really accessible.

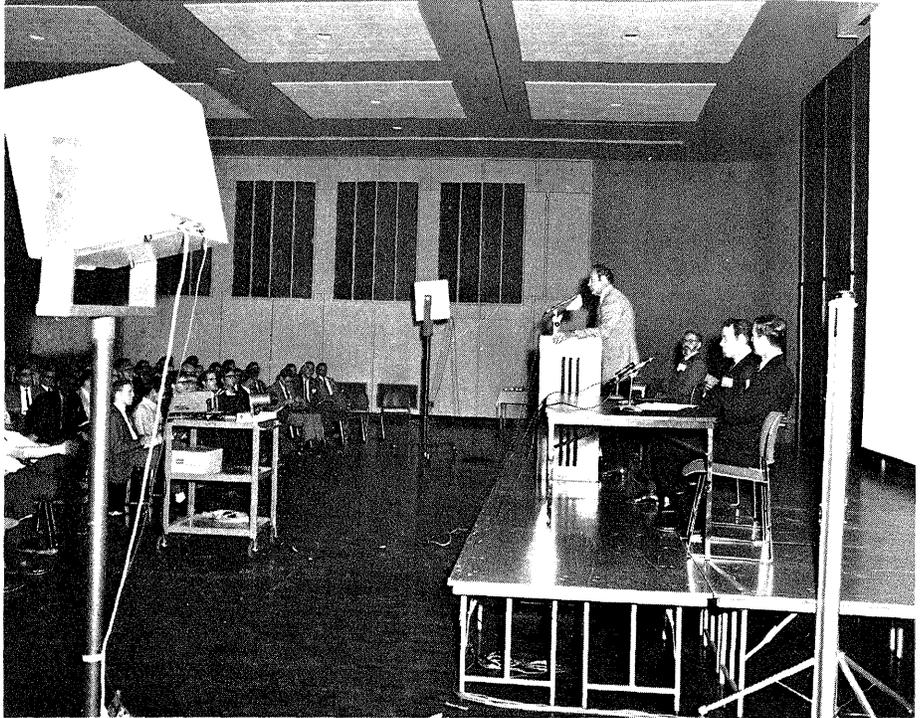
The first Computer Center with which I was associated was one presided over by a mathematician who amused himself hugely by teaching the computer to play bridge with him and who was able to make it play Jingle Bells. He got on very well with those who were interested in mathematics and computer technology, but very little touched people like me who had some background in English, and even other people who were more technically inclined but were not interested so much in what went on inside the computer as in what they had to put in in order to get what they wanted out.

It does seem to me that in a short time we have come a long distance in trying to make contact and make the appropriate interfaces between the whole range of us on campuses who either are beleaguered administrators, or partially-educated generalists, or hyper-educated specialists in the wrong specialty, or disadvantaged students, or even advantaged students, making the interfaces between this great range of people and the technology now available.

As I have said, it is a great step forward to have something that looks like a possible international, inter-cultural, inter-disciplinary language. I hope very much that APL or its modifications or successors will indeed provide solutions to these problems of which I have spoken.

So, it is a great personal and professional pleasure to me to greet you here on behalf of the State University of New York at Binghamton and on behalf of all of our colleagues who will gladly learn and gladly teach. Thank you very much.

Welcoming Address,  
President Dearing speaking.  
Seated front to rear are:  
Messrs. Higgins, Roberson,  
and Falkoff.



APL\360 History.  
Messrs. Falkoff and Higgins

