INTERVIEW with JOHN HOLLAND
May 14, 1974

McCULLOCH: The first question is, what attracted you about coming to Irvine?

HOLLAND: It was the opportunity to take part in the planning of the new campus basically, and particularly a campus of the University of California. I'm a graduate of the University of California at Los Angeles, and it was just very attractive on the basis of living in southern California and taking part in something new and having a chance to be in on the planning stages.

McCULLOCH: What about Ed Steinhaus? Did you know him?

HOLLAND: I had never met him before and was very much impressed by him. Probably as you know, Ed and I became very close friends—one of the most respected men I've ever met.

McCULLOCH: He was my best friend on campus, Jack, and I still miss him. There isn't a day goes by that I don't think about him. I almost choke up just talking about him.

HOLLAND: Yes.

McCULLOCH: Well, were you excited about his new plan of dividing up and into the various subgroups? Yours was molecular/cell, wasn't it?

HOLLAND: Yes. Well, Ed actually pulled a dirty trick on me, there; he fooled me. When I first talked to him, we were going to be one division with no real subdivisions, much as we have here in biology, and, soon after I arrived or really before I arrived, he suggested that it would be best for a number of reasons to divide into different areas, and he asked me to head the molecular biology, biochemistry subarea, and I foolishly agreed. That's how I became an administrator. When I signed on, it was simply as a
senior Professor. I was the first Professor hired, the first nonadministration hired on the Irvine campus.

McCulloch: (No, Arthur Marder preceded you.) What was the date of your arrival, John?

Holland: We arrived September 1, 1964.

McCulloch: Well, therefore you remember the conferences we held in setting up our Irvine plan which we put in the purple book in which we have your picture. Have you got any recollections of that?

Holland: I'm afraid I don't. That was so long ago, and I've been on so many planning -- I've planned two college curricula here, and they all merge into one after a while, and I'm afraid all I can remember is sitting around the table and discussing all the options and that it was quite democratic and what emerged was that plan which was acceptable to all the participants.

McCulloch: I think the breakthrough was what we called the 6-3-3 requirement, which was general education of a kind, but more a breadth requirement and not true general education. By having 6-3-3 and only five divisions, you have to have six or three in science.

Holland: Yes.

McCulloch: And that's how we worked it out. I felt very strongly that every student should have a science.

Holland: Yes.

McCulloch: And others, of course, were more free-wheeling, and that's how it ended up. And by the way, the 6-3-3 has gone pretty well.

Holland: Yes. I always thought that was a good plan.

McCulloch: Now turning, Jack, to your own recruitments and your own appointments, did you find you had any difficulties in recruiting because of the Universitywide system of setting up review committees and so on?
HOLLAND: No, that was no problem at all. I was surprised at the difficulties in recruiting established prestige people. I'm still surprised here even, at San Diego, where we've had a long history of being able to hire members of the National Academy of Sciences and so on. It's still very difficult. I attribute this not to our committee system, which I'm strongly in favor of (this review process, I think, is a very fair and open and honest one), but to the political troubles we've had in the state over the last 10 years. The free-speech movement began in 1964. The fall that we all arrived at the Irvine campus was one of the darkest days in the history of American universities, and we haven't recovered from that yet, nor is it certain that the University of California will ever recover in our lifetime from the impact of that six-year period during which we went through Cambodia and so on.

McCulloch: There's no question that you're right, Jack. When I left the Humanities deanship in 1970, we were suffering from it. Reagan had cut our resources such that, whereas I always got my number one choice after 1967, I sometimes didn't get my number one choice after that.

You approve of the review system, and I suppose Ed helped you a lot in knowing the University so well. He could sort of guide you in terms of the steps you took in filling the appointment, possibly rewriting some of your recommendations. Did he ever do that?

Holland: No, that wasn't necessary. I had had enough experience with the University of California previously that this was not a problem.

The way Ed helped me was in a much more personal and direct way. He actually went to the point of spending hours and hours with the people I was trying to recruit. He and I spent many an evening together wining and dining top prospects from around the country. As it turned out, we never did succeed in hiring another senior Professor, a person of great prestige who
would have been a big asset at that time. We came very close, and we always lost in the end; someone else would get them. So what we did at that stage was to decide to go for very brilliant and promising younger people, like Leland Hartwell and some of the other bright young people that we brought in, and that has implications for the development of the campus which are obvious. You have a lot more development in the future, but initially you don't get quite the amount of wisdom and quiet self-confidence and independence that you get when you have a number of older senior Professors around. We're getting to that situation here. Our department has nearly 50 faculty now, the vast majority of whom are Assistant Professors, and once again we older people are feeling a little bit pressured to handle more than we can handle. I felt that way at Irvine.

McCULLOCH: If Ed were to be in a department, which one would Ed belong to? Yours, would it be?

HOLLAND: He could have fitted into almost any department there, because of his catholic interests. Ed was a very broad person. He called himself a pathobiologist; in his terms, that means someone who is interested in wide biological processes or groups which develop diseases or pathologi-cal processes. Ed had a very broad interest. He wasn't very well trained in biochemistry, but he was well trained in soil biology, so he would have fitted in our department on that basis. He certainly fitted into organismic biology, because he worked with insects all the time. He certainly also would have fit into population biology, because of his interest in insect population. Psychobiology, perhaps, would have been the only department in which he would not naturally have fit, but his interest in behavior was considerable, too.

McCULLOCH: Is Howard Schneiderman, Jack, pretty much—is he organismic? What is he?
HOLLAND: Developmental biology. This is a new specialty.

McCulloch: Is that the one Grover Stephens chaired?

HOLLAND: That's the one that falls most under Stephens's old department, yes. I don't know who is the Chairman of that now. I guess Schneiderman.

McCulloch: Yes, Schneiderman. He wanted to get out of it.

HOLLAND: Yes.

McCulloch: You'd be interested to know that Thompson, who went to Harvard, is coming back again.

HOLLAND: Is that right?

McCulloch: Jim McGaugh is very happy.

HOLLAND: Yes.

McCulloch: He thinks things are better at Irvine, so we're very bucked up about that.

HOLLAND: That's nice.

McCulloch: The best news I could bring you, I guess. Well, going on to the program, itself, and the planning of the program, itself, could you tell me a little how you did it? Did you work with Ed, did you two set up your program in Molecular and Cell, or did all four department heads meet, or did you bring in consultants to help you, or what?

HOLLAND: We had to break the program into different categories. Graduate training was the specific province of each group. Ed was very democratic. Ed allowed us to work out our own program entirely at the graduate level. Ed's main concern was integration at the undergraduate level, and the way this was done was initially when the four department Chairmen (we were called Group Chairmen at that time) first arrived; we sat down and started hammering out possible curricula. Then as we hired new people, they were plugged into the planning process. Ed never was the kind of man to
impose his own views; his sole exception if he felt we were making a mistake, he would let us know that. Ed was very democratic, and this was always done through round table discussions, and eventually as the newer faculty arrived, by committee work. We set up individual committees to handle certain kinds of curricula. So the curriculum was interdigitated so that we had joint programs and joint courses—core courses, so to speak—and this was all planned by the department Chairmen at first in concert with Ed and done very democratically without Ed's taking a strong advocate role.

McCULLOCH: Do you mean a core course, Jack, a course that is common to all the biological sciences?

HOLLAND: That's right. If a man majored in Biological Sciences, with whatever interest, he had to take certain basic core courses, and those were the ones that Ed was the most concerned about. The optional courses were, again, as with graduate training, left up mainly to the individual departments to plan and to develop these and to make them attractive.

McCULLOCH: And therefore you worked with that staff that you had accumulated at the time, and then you changed as the staff changed?

HOLLAND: When you got a new staff with new capabilities, you could offer new elective courses, but the basic core developed by common agreement and was altered by common agreement.

McCULLOCH: By common agreement—that's very important to know. Were there any problems that you ran into in regard to the Academic Senate and its committees in terms of your program? For example, the Committee on Educational Policy was probably a key committee. Now, did it in any way—

HOLLAND: No, no. My entire experience in the University of California has been very positive at all campuses. It was very positive regarding the Academic Senate committees. I'm a strong believer in this system, and no question you can ask will ever get a negative answer. I have found that
committee system sometimes to go wrong, but always to right itself. There is always an appeal possible. There is always a way to get around weak Chairmen to get a job done that's not being done. The ultimate appeal is to the full Assembly, either to the Academic Assembly, statewide, or to the full Academic Senate at each campus. Whenever I found committees making mistakes, I always found they were rectified at the next level, so I was fairly convinced that this was a near-perfect system, and it only needs good people on it.

McCulloch: Well, near-perfect; near means if you have good people.

Holland: That's right.

McCulloch: But if you permit any mediocrity to slip in, you're in trouble.

Holland: You can't find anything with mediocrity. Near-perfect refers to the possibilities of the system, given ideal people; given slobs, you get slobbism, no matter what system you set up, and it's very true.

McCulloch: Jack, I remember you were active on several Senate committees, but the first big argument or discussion we had was whether we should abolish the College of Arts, Letters, and Sciences, or whether we shouldn't, whether we should divide, the divisions to be called schools or colleges or have a broad College of Arts, Letters, and Sciences. How did you feel about that?

Holland: I have always believed that education transcends professional interests, so I have always felt that at some level you need broadening experience, and I don't care whether you do it through a College of Arts, Letters, and Sciences or through some other mechanism. I feel that the ideal system for students to become educated is to come to an exciting campus where they are encouraged, but not forced, to take a wide variety of different kinds of courses and where they have the opportunity of meeting
people different from themselves at all levels, even at the coffee- or beer-bar level. I think the faculty often overemphasizes its role in the University.

To me as an undergraduate and a graduate student at places like UCIA, my education came as often as not outside the classroom. And I think that what we can do is set up a system and set an example by which students come to recognize that the intellectual life is important and that the pursuit of knowledge and the pursuit of all alternatives is possible and rational. I don't really care how one sets this up; what is really important to me is that students attain some breadth, that they not be narrow scientists or narrow historians or narrow whatever.

McCULLOCH: I'm in complete agreement with you, and what has happened, Jack, is that—I was, and so was Ed, we were all Deans wanting these schools or colleges, but we felt that, as we grew bigger, we would still be a unit within ourselves and get to know each other, and that the 6-3-3 would permit the student to get the breadth. We worried a little and thought a little about professionalism, meaning each school or college becoming too professional, and, if anything, that has happened sometimes and is what we've got to guard against.

The 6-3-3 student is really introduced to a wide spectrum. It's called Pass/Not Pass now. It encourages adventure, some to take something way outside their field. On a Pass/Not Pass basis, they don't get a Fail now, they just get a Not Pass.

HOLLAND: Yes, we do that, too. In general, I think I'm more and more liberal with regard to what's required of students. I'm involved in the fourth college planning. I'm in charge of the biology planning of the fourth college. I was involved in the second college planning of the biology program.
And my tendency is to trust students more and more, not to force down their throats but simply point out to them that if you take all mathematics courses or all physics courses or all art courses or art history courses or all music, whatever your narrow interests, you won't be educated. The kinds of requirement that I tend to impose on a student involve an awful lot of options.

I believe in what we're doing now in the second college; they must take some courses outside their specialty area, but they can choose. If they are nonscientists and they're required to take some science courses, they can choose whether it be psychology, anthropology, biology, physics, mathematics, and that's the kind of thing that I lean towards.

They're not allowing total narrowness, but not forcing so-called fine arts courses down students' throats when, as we all know, you sometimes in these situations get poor teaching because the students are forced to be there. So I would try to keep pressure on the professors to do good teaching by making their courses somewhat optional—let those who do the good teaching attract the students and let those courses that are not appropriate wither rather than require them so that they'll have a captive audience.

McCulloch: You'd be interested, Jack. My boy is at Muir College, and he's in his second year, and he's having a good experience. So far as I know, he's teetering now between economics and history—it's amazing. But he's enjoyed his work, and he's going to stay here. He was thinking for a time of possibly transferring to Berkeley or UCLA where the department was bigger. I didn't try to force him or anything, I just said what I thought about it, and so far as I know he's going to stay. In fact, I know he's going to stay.

Jack, I want to ask you this question. You said you were in the University of California sometime before you came to Irvine.
HOLLAND: Yes. I've always had strong ties. That's where I received my PhD, at UCLA, and I had strong contact with people at UCLA in a variety of departments when I was at the University of Minnesota, at the University of Washington, and then after I came to Irvine. I still do now.

McCULLOCH: Did you ever teach in summer school there or anything like that?

HOLLAND: No, I never did. I was a TA during my graduate career.

McCULLOCH: When you were a TA, Jack, that's when you got to know something of the UC system.

HOLLAND: I understood the system before I left, yes. I understood the system fairly well.

McCULLOCH: Now, going on, there aren't many more questions to ask you. The one I like to ask everybody and get interesting reactions, what would you do if you had to do it all over again?

HOLLAND: With regard to Irvine, do you mean what would I do differently, or would I go to Irvine?

McCULLOCH: No, no. Assuming you went to Irvine, what would you do differently? Really, I'm thinking in terms of (a) program and (b) your recruiting and (c) the general program you've set up, general education requirements, the breadth requirements. I'll be frank with you--so far as history is concerned, I advised the Chairman because we had this unusual situation of three senior people who were really senior I advised not to put in too many Associate Professors, but to load up with Assistant Professors and give them a freedom so that they could move in without all bunching up together and possibly not getting tenure. Now, if I had to do it over again, I would put in three Associate Professors, I would ask the Chairmen to do it, and that's what I would do, as an example.
HOLLAND: Well, that's an impossible question to answer. If I really had it to do over again, I'd want to come to the University of California at Irvine in 1954 instead of 1964. I blame an awful lot of the problems that I ran into personally there as being due to the times. One simply can't start a University of California in 1964 without running into very serious problems, as we did, in recruiting.

At the time that we had all this unfavorable national publicity, it was simply not possible to get the kinds of people that Ed and I were determined to get at the senior professor level. We tried to get some of the top molecular biologists in the country (I don't want to mention names, but these were Nobel-Prize-level people). And I wanted to get out of adminis-

tration. I just wanted to catalyze this and get very top-level people, and, although we came close, I still feel that the time was against us, and we didn't make it.

If one contrasts that with San Diego, we did manage to get some very old accomplished, highly productive people of continuing productivity who have gone on to win Nobel Prizes and many of whom will in the future in sci-

ence, although we are weak in the humanities as compared to almost any other campus, and we've got to rectify that.

But in science we're very good here, and I attribute it to the time in which we started, so, if you want to put it in practical terms, if we did start in 1964, knowing what I know now, I'm sure if Ed were here and he knew what is known now, Ed would agree that we should have held off the opening of our biology program on a large scale, no matter what Dan would have thought or anyone else would have thought; we should have demanded that we start with balance at the top and not hire quite so many young Assistant Professors, that if we didn't hire absolutely outstanding people in 1964 or '65 or '67, we hang on until we get them and not develop a large program.
What happened was, we got a very large undergraduate class, and I and Lee Hartwell and Cliff Woolfolk and Wendy Stanley and all the other young guys were deluged with students, while they were trying to get their programs off the ground. It was grossly unfair to have that many Assistant Professors bearing that kind of burden under those circumstances at that time, '64 through '70, terrible years to be an Assistant Professor, terrible years. So I simply wouldn't do it that way again.

And if I had to do it over again, I would demand of Ed, and I'm sure Ed would agree, that we simply hold up the development of Biological Sciences until we did get senior people of great stature who could have pulled this off at the kind of level that was necessary to achieve great stability and a stronger future for the sciences in these particular areas.

McCULLOCH: Well, I will say this for the record--number one, to correct you a little bit about your Humanities, you really have some very distinguished people in the humanities, like Roy Harvey Pearce and Jack Stewart, the Provost of Muir College, and others. The weakness really is in the social sciences, and John Galbraith was brought to try and start things and did begin everything, and then, as you say, the whole national situation was against trying to recruit senior social scientists to come in. And even now you're just beginning to put together a Sociology and a Political Science Department.

HOLLAND: Yes.

McCULLOCH: You've got a strong History Department, and you've got strength in economics, but the other two just had to be built, but the humanities for some reason, men like Neumark, he's a very distinguished linguist--

HOLLAND: Oh, yes. I'm not talking about the quality of the people here; I'm talking about the numbers. I don't think we have adequate numbers of people in anything but the sciences.
McCulloch: I see. There I agree. I thought you meant the quality; in numbers you are right.

And the other thing I wanted to say, Jack, is that, whatever you said about needing to wait for distinguished people, the people are working out so well in Biological Sciences that I'm sure. I'm sure that everybody will agree with me that Biology is the strongest school at Irvine; it has the greatest national visibility, and there are going to be some young fellows there who are going to make big names for themselves. The fact that Thompson came back from Harvard and would rather stay at Irvine, stay on and work, indicates how good our School of Biology is.

Holland: My remarks are not intended as a slur on the school.

McCulloch: No.

Holland: I'm never satisfied with anything. I don't think Irvine is as good in Biological Sciences as it should be; I don't think San Diego is; I don't think Berkeley is. There aren't too many places that I would hold up as ideal, but I think we always have to strive for the ideal, and I don't think that the way I started that department is the way I would do it again.

First of all, it was unjust to the young people, and we're doing that to our young people here, burdening them with heavy teaching chores when they should be developing their careers, spending more of their time in the library, in the laboratory, thinking and researching. I'm afraid the University of California, as one of my colleagues puts it—Peter Geiduschek—has become a consumer in the intellectual market rather than a producer in the University of California. I hesitate to accept that as a total indictment, but I'm afraid that it may be becoming true. We're turning elsewhere when we want great talent; we turn elsewhere to get it, rather than developing it. We're all so busy with teaching, committee work, and again I defend this committee system very
thoroughly, but it takes time; we all spend an enormous amount of time at it.

I'm frankly worried about the future of the University of California. We're doing a good teaching job; we're doing an excellent job here, at least in certain spots, but, when I talk about distinction in the University, I talk about a whole lot of intangibles--excitement, a feeling that the future is just around the corner and you have to get ready for it. I'm afraid we've lost a lot of that, and I don't know quite how we recapture it, but I'm not satisfied with Irvine, and I'm not satisfied with San Diego, and I'm not satisfied with UCLA or Berkeley.

I do ask where we went wrong. I do know partly--it's due to our society. Our job is to mold the society, not to be molded by it. If we complain that the society has let us down, then it has to be true that we have let the society down, because education is failing.

McCULLOCH: I do feel happy, though, that Malcolm is here, because I do feel than an A grade means an A. I feel at times that at Irvine we've lowered our standards a little. I think that those pressures of Cambodia--the whole situation where the students brought great pressures upon the teachers--have receded and, as far as I am concerned, it is a pleasure to teach once again--I really enjoy my teaching. They're really doing their assignments and so on. But there's a mark left, and I think that La Jolla is looked to certainly in the sciences as holding up very high standards. You're a perfectionist, Jack.

The last question, Jack, is there any experience that we've missed or anything that you'd like to comment about in your years at Irvine and your work as a teacher and scholar that you'd just like to put on the record?

HOLLAND: No, but you came close to asking that question that I'll ask myself and answer--would I do it all over again? The answer is yes--it was
fun; it was a lot of fun. Again, I nearly choked up—the greatest pleasure was to know Ed.

McCULLOCH: Well, you and I can share that, for he was my best friend, and there isn't a day that goes by that I don't think about him, and I park my car in Lot Seven, and I always refer to the greenhouse as the Steinhaus, because I remember how unhappy he was that that wasn't built right away.

HOLLAND: Yes.

McCULLOCH: Well, thank you very much, Jack. It's so nice to come down to see you again.