

This is an interview with Dr. Joseph Edward Rall, former Deputy Director of Intramural Research at the National Institutes of Health, Bethesda, Maryland. It was conducted in office in Building 10 on June 30, 1998. The interviewer is Melissa K. Klein.

The subject of this interview is Dr. Rall's reflections on the Clinical Associates Program.

Klein: Dr. Rall, I will be recording this interview. Is that all right with you?

Rall: Fine.

Klein: Perhaps you could begin by giving me a brief background of your childhood, where you attended college and what made you decide to pursue a career in medicine?

Rall: I grew up in a little town outside of Chicago called Naperville. My father was president of a small college there called North Central College. So I seemed to have no option but to go to college there. I had a couple of uncles, one on each side of my family, who were physicians. So, it just seemed reasonable to become a physician. I had no particular thought as to why. I had chemistry set, and one advantage of being the college president's son was that the professor of chemistry would sell me chemicals for my chemical set and he would sell me anything I wanted. So, eventually I went to Medical School at Northwestern, went to the Mayo Clinic, went into the army, went back to the Mayo Clinic where I got involved doing some research on the thyroid in some laboratories. It was very informal, you have to remember this is the late forties. So my preceptors really did not pay too much attention to me so I could do anything I wanted to. I played

around in the laboratory for a year and a half, and they probably would have let me stay there for another two or three years because I did not cost them very much, and I did not get in there way. I managed to get a Ph.D. out of it and then went to the Sloan Kettering Institute Memorial Hospital in New York. I had a marvelous time there trying to learn some of the chemistry and physics that I had somehow managed to miss. I heard about the NIH from Dr. Hans Stetten, Scientific Director of the old Arthritis and Metabolic Disease Institute. At the NIH, I saw all of these labs and all of this scientific equipment, and at a small decrease in salary, I said, 'There's no option, I've got to go there!' So, I came here and I never expected to stay very long, but I've been here since 1955.

Klein: You were a fellow at the Mayo Clinic, correct. Why did you choose to go there as opposed to the NIH?

Rall: This is now 1945, and I did not know anything about the NIH. I did not know that they took fellows, I had never heard of it, and it was not in the consciousness of most people.

Klein: What position or positions did you hold at the NIH between the years of 1963 and 1975?

Rall: I was Scientific Director of the Institute which is now Diabetes, Digestive and Kidney Disease. In 1981-82, I was the acting Deputy Director for Science. In 1983, I became Deputy Director for Intramural Research. I held this position from 1983-1991, until Bernadine Healy who did not like me, asked me to leave. Since then, I have had some post docs and have been conducting research on nuclear hormone receptors. I retired in December of 1994 or 1995. But I've kept

my lab and office and I continue to go to work every day, except I don't get paid.

Klein: Could you explain briefly the purpose of the Clinical Associates Program and when and why you think it was established at the NIH?

Rall: From a pragmatic standpoint, it was established because we were getting lots of people here to act as residents or fellows, taking care of patients in the ward, and doing research. It was just awkward to have everybody acting independently. We decided to open it up to anybody who wanted to come, and to set up a schedule, whereby they would see anybody they were interested in seeing and then have a matching plan. That was why it was set up in one sense. In another sense, it was set up because we needed physicians to care for the increasing number of patients in the ward. We needed somebody to take care of them day and night, work them up and that sort of thing. As a result, we needed more residents and fellows. The other thing was we thought we would have a slightly different set up than the average university. Namely, most Clinical Associates who came here spent about half of their 2-year appointment in the laboratory. So it was an opportunity to get into a research environment. So why did the people come? They came obviously for two reasons: One was because of the draft, the 'doctors draft.' Rather than being in the army or the navy or what have you, it was far better to come here. The second thing was by then we were beginning to get a reputation as a good place to do some work after your residency. All of the professors wanted to have their best students come here because they knew they would be here for two or three years and then probably come back to the University.

Klein: What do you think makes the Clinical Associates program at NIH unique?

Rall: Not much anymore because many programs now will incorporate research into them. However, I think the NIH Clinical Associates Program now, which is generally three years, with a year and a half devoted to research, provides an opportunity for uninterrupted research in good laboratories, in addition to which the Clinical Center is set up very differently than any other hospital. There are laboratories right around the hospital and patient care areas.

In addition, the laboratories are populated not only by Clinical Investigators, but also by basic science Ph.D.s who have nothing to do with patients but can have a considerable influence on people. So if you come here as a young M.D., and you do some work for your boss who is a Clinical Investigator and you run into a problem like for instance, you want to purify an enzyme or you want to clone a gene, usually down the hall or up one floor you will find a world authority on it whose not a clinician at all but who knows basic science backwards and forwards. It is a particularly good opportunity for young MDs who want to do research of a fairly fundamental nature. Research conducted in order to be sent out to a 'beltway bandit' to publish a paper, that's not the way we do research. Too often that is the way it is done at some university centers and so that's why the program is good.

Klein: What were the design goals of the Clinical Center and how did the CA program fulfill those goals?

Rall: I was not here when the Clinical Center was designed because it was probably designed in the late forties or early fifties. It opened in 1953, and the first directors said, 'For God's Sake, don't admit anybody who is going to die.' At any

rate, as far as I can tell one of the designers was Arthur Kornberg, who was biochemist who was here for many years and received the Nobel price. I think, but I cannot say for sure, that it was his and other people's ideas to have the patients right next to where there were laboratories for people who were taking care of the patients to study and also, because the Clinical Center is so large, with so many laboratories, and basic science laboratories nearby, sort of to replenish and refresh the Clinical Investigators.

Klein: Now were you involved in the formation of the CA program?

Rall: Oh yes. It was not there when I came. We did everything sort of on ad hoc, talking to old friends. The sort of quintessential old boy network. It worked fine, but we decided it was better to open it up and make it a competitive thing.

Klein: The majority of Clinical Associates therefore came from Harvard, Cornell, Columbia, etc.?

Rall: That was mostly by chance. In the sense that most of the people who came here earlier, were from those places, that is where their friends were, and so those places knew about the NIH better than say the University of Oklahoma. Not that there is anything wrong with the University of Oklahoma, it was just not a breeding ground for research.

Klein: When then program started there was approximately 100 physicians. Did this include vets or dentists?

Rall: I suspect early on there were only physicians.

Klein: Can you tell me about your interactions with the Clinical Associates?

Rall: Of course. It varies more as a function of time and my responsibilities. That is to

say that early on, the Clinical Associates were five or six years younger than I. We were all friends. We socialized together, our wives knew each other and we would 'party' together. Then gradually, they were always the same age and all of us were growing older and obtaining more and more responsibilities. As a result my interactions with the Clinical Associates became less frequent. I know of the early Clinical Associates many of them remained my really good friends ever since. For example, Dan Federman and Mitch Ravkin, both of whom are at Harvard. A whole variety of guys.

Klein: Do you recall any female associates during the early years of the program?

Rall: I don't recall any. Now this may be because there were not any. It may be because I did not pay attention to whether they were men or women. I do know that by the sixties there were female associates.

Klein: That is interesting because I was told that it was an unspoken rule that during the sixties at least, that there was an unspoken rule that these slots were saved for men because women were not subjected to the draft.

Rall: I have heard that, but I don't think most of us paid much attention to it. There were not many women who applied because at that time the fraction of women in medical school was about five or six percent.

Klein: According to an article in the May/June 1964 edition of the *House Physician Reporter*, the CA position was highly prized because the 2 years of service required by the program satisfied a participant's military service obligation. Do you think the program would have been as popular had this not been the case? Why?

Rall: I am sure it would not have been. That was a strong stimulus. Do you know anything about the Research Associates Program? Let me tell you about it. That came in the early sixties. Chris Anfinsen was here in the Heart Institute and left and went to Harvard. I got him back here and he was interested in running a program for M.D.s. We had started a program for Research Associates. The Research Associates were different from the Clinical Associates. The Clinical Associates were hired by each clinical group. They knew where they were going to work. The Research Associates were by and large hired by an Institute, Heart, Arthritis and Allergy were the main institutes hiring. Research Associates could work anywhere they wanted. So when they would come on the first of July, and by the way never get sick in the first week in July because all the house staff turns over, at any rate the Research Associates could do anything they wanted. So when they would come, the Scientific Director would chat with them and ask what they were interested in and then give them a list of five or six people or labs they might want to work in. They would decide where they wanted to work. That was generally for two years but could be extended. Chris Anfinsen organized a series of course or seminars or workshops exclusively for Research Associates. For example, he and David Davies would make a model of an x-ray crystallographic structure of a protein. Remember now, this is the early to mid-sixties when this was very exciting. There were all sorts of special conferences and symposiums just for the Research Associates. That made the Clinical Associates angry--they wanted to be in on it and so for a year or two there was sort of a flap about that. Then gradually, Anfinsen became less interested in it and he finally left and the

seminars for research Associates just disappeared. There was a very exciting time from early sixties to the mid to late seventies that Research Associate Program was very popular.

Klein: Do you think it was more popular than programs similar to it at the Universities?

Rall: That is hard to say. We got a lot of people but again you never know how much of its popularity had to do with people wanting to avoid the draft. But, we certainly got all the top students from all the top schools.

Klein: Is that the case today?

Rall: No. On the other hand, everything has changed. We talk to our friends at universities and hospitals and they are having trouble getting first class people who want to do clinical research.

Klein: In my interview with Dr Klein, he made it clear that for financial reasons alone, Clinical and Basic Research are just not as popular any longer. The numbers going into private practice are much more.

Rall: It is curious because back when they were so excited about research, the tools and opportunities to do important research were so trivial compared to what they are now that now is a much better time to be in research than 25 years ago when everybody was excited as hell about it. The economic factors are very important. Also, part of the Vietnam War and Civil Rights was also the time of Rachel Carson and the beginning of the Environmentalist Movement. Part of the Environmental Movement was a rejection of cold, hard-blooded science. People were supposed to be more caring and unsympathetic-- cold science was rejected. So this permeated gradually during the seventies and eighties to the medical

students and research became deglamorized. This certainly contributed to less interest in coming here. It is also why universities have also had trouble in the last 10 years filling their slots for clinical and research M.D.s. I have a feeling that managed care and the decrease in physicians salaries and the increasingly onerous task it is to be a physician will make research look less glamorous and less lucrative than it did even six or eight years ago. If you think about it, the physician has four years of medical school, then, he has an internship and a residency which nowadays keeps him afloat, but does not come close to allowing him to repay anything! Physicians come out of medical school in much bigger debt than lawyers do because tuition is higher.

Klein: This is in many ways scary if we do not have physicians interested in doing research to combat disease.

Rall: What happens is that PhDs are doing it. If you look at the fraction of successful applicants for an R01, an NIH research grant, the fraction of those who are M.D.s has been decreasing steadily for 20 years.

Klein: Are you familiar with the Berry Plan and if so could you explain its purpose.

Rall: Its purpose was to equitably arrange internships and residencies for physicians. It guaranteed a certain number of people one, two or three years of deferred residency. It was done by chance, I believe.

Klein: Could you tell me about your time in the military.

Rall: I entered Medical School in 1940 and the war began in 1941. Before the war began however, there was a draft. The United States government decided that if there was going to be a war they were going to need physicians. So it would be ill

advised to draft those students who were going into medical school because in a few years they would be physicians. So, what they did for medical students was to give them a position in the Medical Administrative Core. All you did was write in and you were admitted. So, I got that but then sometime in 1942, they decided to put all medical students in the army or the navy and you had your choice. That was called V-12 if you were in the Navy program and you no longer commissioned. You were now a non-Commissioned Officer. You got paid and they took care of your tuition and you did not have to wear a uniform. I had already started to do research in medical school and I decided that I just would not join the army. So I did not join even though about 98 percent of medical students joined either the Army or the Navy. So one day the registrar called me up and said, 'We did not have any students who are not in the military except for you. We have some scholarships, do you want a scholarship for your tuition.' So I did virtually as well as those people in the army because I had a scholarship and two research projects that I got paid for and then I worked in a hospital at nights. After I graduated medical school, I had this funny inactive commission since 1941. I thought they had forgotten about me because I went through my internship and then went to the Mayo Clinic. Two weeks before I was through that first year at the Mayo Clinic I received a letter that said report for duty.

Klein: Can you describe the feeling on the NIH campus in regards to President Johnson's Vietnam Policy?

Rall: Everybody was very upset and there were protests. I remember Chris Anfinsen, a very charismatic biochemist who received the Nobel Price many years ago, and

Maxine Singer who is now president of the Carnegie Foundation, and quite a few other very senior scientists participated in a demonstration in front of Building 1 in protest of the Vietnam War. We had Doctor Spock speak here. There were all sorts of anti-Vietnam things. Bob Marston, who was director of the NIH at the time, was not a scientist. He was a very nice man and he managed to keep things under control so that there was no overt strike. Nonetheless, people were able to demonstrate. Later, Nixon fired him because he had not been tougher. On the other hand, had he been tougher, it would have been a disaster. The people here would really have gone on strike and left. It just would have been a great big escalated mess. People often said at the time, what are these government employees doing? But we did not consider the NIH to be a government institution. We were like a university and we were going to do exactly what they were allowed to do at the universities at the time. We are not a bunch of drones that do what the government tells us to do. We are supposed to have some brains and do something independently. If you get people who think independently then inevitably they are going to act out some of their political feelings and that is what happened.

Klein: In 1967 *Science* reported, “NIH is different, ... it really isn’t like a government research establishment.” However, just two years later *Science* reported that “For better or worse, federal policy making on health matters and therefore on biomedical research is being politicized. And this, as well as the Vietnam War budget squeeze, has abruptly brought to an end the decade of remarkable growth in biomedical research which is already being remembered with nostalgia as the

good old days at NIH.” What do you think caused this shift in opinion? Do you believe that this view was the general consensus among NIH researchers at the time?

Rall: This follows budgetary changes and there was a lot of noise in the system. Some of the noise was more than noise it was real because of the Vietnam War and budget problems. By and large the NIH did well from a financial standpoint. I think the NIH has continued to act more like a research institute or a university than a government institution. We have on a very pedestrian level all sorts of way of hiring people that no other government institution has. I can remember a number of years ago the number FTEs or Full Time Employees, was carefully monitored by the Office of Management and Budget. We were always short of FTEs so we set up a visiting fellows program. Under one of the broad articles setting up the program, we could hire people to teach these foreigners research and they did not count as full time employees. We got the Intramural Research Trainees by stretching the same language in the law. Those are IRTA’s and then we got pre-IRTA’s who are college students who are taking a year off to work. None of those are regarded as FTEs. Then we have experts who are not considered FTEs and so on. So the NIH has continued to grow and has grown a little fat in the sense that if you go around the labs they are jammed packed. It is not totally clear that we always get the best people. Sometimes we get just get pairs of hands to help us. There probably should be a little more control over the quality of the post-docs we get. Commissioned Officers were not really commissioned for two or three years as Clinical or Research Associates. They

were commissioned and basically we just expected them to leave after two or three years but if they were to dig in their feet there was not much we could do. I remember one guy wanted to stay who was not very good and I threatened to fire him. But, in point of fact, I could not have fired him. I bullied him into leaving anyway. We tried to regularize the tenure process for Commissioned Officers. Thirty-Five years ago, we set up a Staff Fellowship program and they came here under limited tenure which the Civil Service of course hated because this was anathema to the Civil Service. So we have always had a very large number of temporary employees. Now, there has been a big attempt to systematize or regularize the procedure for someone getting tenure. It is becoming much more difficult and people are here for 6, 8 or even 10 years until they finally get tenure or else are told to leave.

Klein: Did the Vietnam War budget squeeze ever affect your ability to conduct research here?

Rall: Not seriously.

Klein: Was there any Congressional interference?

Rall: You get a little. In fact, when I first came here, there was a big stir over researching diabetes because one of the Senators' wives had diabetes. For years we were trying to get someone who was interested in diabetes. Well, we finally got someone but by that time the Senator was gone. Another instance, more anecdotally, the orthopedic surgeons wanted to have more of a presence at NIH. So, we were told to put in an Orthopedic Surgery Department. I called all sorts of people and the best guy was a guy from Sweden. I had him over for dinner and I

showed him around campus, but I realized that he would not make half as much money here as he was making in Sweden. I finally approached a resident and offered him the job. Well he turned us down so I was forced to go back to our Congressional aides and tell them, 'Look, I've done my best. But when a resident turns us down as head of our Orthopedic Surgery, there is nothing I can do.' They accepted that. My point is with a little honest good will on the part of the NIH, you will find that Congress will be understanding. That is not to say that Congress is not always earmarking funds for this that or the other.

Klein: In my other interviews, there was a general consensus that if you wanted to get ahead in academic medicine having the Associates Program on your CV, was a tremendous help. Do you agree and if so why?

Rall: I would not say it was a tremendous help, it certainly did help. But probably more important was the publications you had which were the result of you working here in the lab.

Klein: Could you evaluate the Clinical Associates program. What did it offer its participants, the NIH and the biomedical research community?

Rall: It had a major influence on medical training in the sense that the addition of a serious research component to training of subspecialists, who were going to end up at universities was pioneered here. It was then, more or less, rapidly adopted throughout the medical community. Duke was early on perhaps because of Jim Wyngaarden who was a professor there and had spent two or three years here and knew the situation here very well.

Klein: That is very interesting. NIH employees seemed to have gone off and started their

own establishments.

Rall: They have gone off everywhere. Almost all the major schools have half a dozen professors of one type or the other who have spent time at the NIH.

Klein: It seems that today the number of applicants for the CA program has dropped dramatically and I wondered why that is seeing that former Clinical Associates are now holding prominent positions at the NIH as well as all over the country.

Rall: There is a shortage of really qualified first class people to do combined residency and research. If you are a professor, you are not going to send your best guys to the NIH when you need them in your own department. So the professors who formerly sent us their best students, now jealously keep them because there are not that many to spare.

Klein: Is there anything else you would like to comment on or add?

Rall: No, except to reiterate the fact that the NIH among other things has done such a great job because it has not felt itself to be a government agency. It has felt itself to be a university research institute. I remember when I was Deputy Director of Intramural Research something came up about a new personnel program and the head of personnel reported back and said, 'Well I've checked to see what they do in the Air force and the Department of Defense.' I said to him, 'I do not give a damn what they do at the Air force or the Department of Defense. Have you checked out the Rockefeller or Stanford?' I think this is a characteristic attitude and if we can keep that, then we will continue to have successful programs. The shortage of M.D. investigators will get better.

Klein: Why did you decide to stay?

Rall: I was having a good time and the labs were great. I had great co-workers and there was a night school and I took several courses. There were very brilliant basic scientists here. I looked at other jobs but they did not seem to be as much fun.