

Dr. Henry Metzger Scientific Director of the Intramural Research Program for the National Institute of Arthritis and Musculoskeletal and Skin Diseases at the National Institutes of Health

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The subject of this interview is Dr. Metzger's reflections on the NIH Clinical Associates Program. The interviewer is Melissa Klein.

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

Metzger: That will be fine.

Klein: To start off, perhaps you could give me a brief background of your childhood, where you attended college, and what made you decide to pursue a career in medicine.

Metzger: I was born in Germany and my family immigrated to the United States just before World War II. I was raised in uptown Manhattan of New York City. I went to the Bronx High School of Science and from there to the University of Rochester in Rochester, New York. I then went to Medical School at Columbia College of Physicians and Surgeons which was very close to where my home was. I took a year of internship and a year of residency in internal medicine at the Presbyterian Hospital which is connected with PNS. I then came here, to the NIH. Somewhere certainly during my medical school period in particular, I knew that I was interested in at least exploring the possibility of doing teaching and research and at PNS we had the opportunity. It was a little bit of an unusual medical school curriculum for that time in the sense that it was all year round. You only had one summer vacation which was between your freshmen and sophomore year. After that, it was all year round so it meant that there was more time for electives and one of the electives was to do research. I did some research with a doctor named Beatrice Siegel and that got me very interested in immunology which was quite strong at Columbia. At that time one of the trends that was developing was the application of protein chemistry to immunology. I was advised that that would be a very good kind of training to pursue. When the opportunity came to come to the NIH that is what I pursued.

Klein: What year did you come to the NIH?

Metzger: I came to the NIH in 1959.

Klein: Were you a Clinical Associate?

Metzger: I was a Research Associate. The Research Associates Program was a little bit different than the Clinical Associates Program in several ways. Number one, unlike the Clinical Associates Program there was no required clinical aspect to it. Although I think even at the time if one wanted to continue to have some sort of clinical activity one could. But there was certainly no requirement for that. Secondly, it was a much smaller program. I won't necessarily say select, although I do think some people felt that way. I don't know how many Clinical Associates there were in the Arthritis Institute, the old Arthritis Institute, but

each of the Institutes I think had only three or four Research Associates. Unlike the Clinical Associates, when one was chosen, one was not chosen for a particular laboratory. One was chosen by the scientific director and then after one came here, one decided which laboratory one would be working in by going around, visiting different laboratories, speaking with people and finding out where there was a mutual interest. Additionally, there was a didactic program where the Research Associates were given abbreviated courses in physical chemistry, organic chemistry, a variety of statistics and so on. At that time it wasn't as common as it is now for physicians to have had a fairly rigorous scientific training prior to medical school.

Klein: What is the difference between a Research Associate and a Staff Associate?

Metzger: I don't remember the term Staff Associate. I only vaguely remember that, and I am not sure what that was.

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

Metzger: I was actually offered an opportunity to come and be on the permanent staff in the Arthritis Institute, just prior to leaving on a Hellen Hey Whitney Fellowship in 1961. I decided to accept that offer and so I came back as, what was then called a senior investigator, in September of 1963. I basically had my own laboratory in the Arthritis and Rheumatism Branch during that period. From 1963 to 1969 I had just that appointment. I don't believe I was appointed section chief until later.

Klein: Did you ever interact with the Clinical Associates as a Research Associate, or was it entirely separate?

Metzger: There was no formal place where we interacted.

Klein: According to an article that I found in the May/June issue of the House Physician Reporter the Associates Positions which would include the RA position and the CA position, were 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 and why?

Metzger: No. I think clearly that the fact that one had a service obligation which could be fulfilled by pursuing one's training, particularly for those of us interested in academic pursuits, was a major attraction. At that time, now you'll have to correct me on this, I don't think the year that I entered, I would have interviewed for the position in January of 1958 in order to be accepted to come on board in July of 1959, at that time I don't recall a concern about having to serve in a war. The likelihood would be that we would be doing physicals at some army base, so that didn't seem terribly attractive.

Klein: So, your reason for coming here was less to do with avoid a war per se, and more to do with NIH being a more attractive option.

Metzger: Sure.

Klein: When I spoke to Dr. Rosen, he believed that the people who set up and maintained the Associates Program saw it as a seeding ground for sending people out to establish clinical research establishments all over the country. Do you agree with this assessment, why or why not?

Metzger: I think that there was no question that at that time, the number of places in the country where one could pursue clinical research or biomedical research in general was much more limited than it is now. And certainly a major role of the intramural program at NIH in those years was to train, particularly physician scientists but not exclusively physician scientists, to pursue biomedical research outside of Bethesda because although there were a substantial number of job opportunities here in the intramural program because that was growing also, but certainly not in the numbers of trainees it had. Only a small percentage of trainees, even in those years, could stay on here.

Klein: Are you familiar with the term yellow berets?

Metzger: Yes, although we didn't use it in those years. I don't recall using the term.

Klein: So you don't know how the term originated?

Metzger: No, I assume that it's a joke on green berets and whether the yellow stood for urine or something like that because that is sort of one of the things physicians are associated with in terms of diagnosis, I don't know. That would have been my guess.

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

Metzger: Only very vaguely because I was not part of that. I think that was a program whereby one could have some of one's medical school expenses covered by committing oneself to medical research as a Clinical Associate after completing some of one's clinical training.

Klein: Could you describe the feeling on the NIH campus in regards to President Johnson's Vietnam Policy? I was told that there was a protest outside of building one and Jane Fonda came to visit.

Metzger: Well, there was a lot of feeling against it that grew progressively. There were groups that met regularly during lunch hour. I don't particularly remember Jane Fonda coming here, but I certainly remember Dr. Spok coming here. People had posters up against the war. There were some people who objected to those posters and some posters were torn down. There were some pretty tense feelings about it and I think that the administration, meaning the NIH administration, who in many ways I think were sympathetic to the concerns of the younger more active activist physicians, on the other hand also recognized that this is a federal facility and so they had to try to seek some sort of a balance in terms of what is appropriate for federal employees to do in the executive branch in terms of protesting against the actions of other parts of the executive branch, but also allowing for freedom of expression and particularly since I think many of them were sympathetic to those concerns.

Klein: I also heard there was an underground newspaper.

Metzger: That I don't recall. I was actually at that time, what years are we talking about?

Klein: 1966, 1967, 1968. '66 was when Johnson sent in ground troops and things were going well in terms of national consensus, we were still in support of the war. The late 60's and early 70's, when we realized that this was no going to be an easy victory, is when things started to go downhill and I was wondering ..

Metzger: At that time, I was quite active in the Assembly of Scientists and at one time there was an Interassembly of Scientists and I was president during that time, and it was a period when we really tried to find a suitable balance of free speech but also recognizing that we were Federal employees.

Klein: What were your feelings?

Metzger: Well, I was certainly very much opposed to the war.

Klein: Did you have Research Associates underneath you at this time?

Metzger: Yes.

Klein: Could you possibly make an assessment as to why they came to the NIH during that period?

Metzger: Well, I'm sure that for them the idea of avoiding having to be in battle was very important. I guess it wasn't something that we discussed because if they were here, in a sense they had accomplished what they wanted to. I would say this, none of these things are simple. For some of them it may very well have been that a primary motivation was to avoid the hazards of duty during the Vietnam war. But there were so many positive reasons for coming here that that certainly must have influenced them also so that ...

Klein: Can you expand on that. What exactly were the positives?

Metzger: Well, there were so many people looking for positions. All of the physicians were subject to the draft. So among those, were people who were very talented, you had all of those physicians who already were committed to academic work and who may have been talented for doing academic work- teaching and so on, and so it was highly selective program and these were people who regardless would have applied for these jobs because the NIH was a terrific place to be at. I don't remember in interviewing people and having young people in my lab discussing why they came here particularly. They may have but I don't recall that. I think that they were to a very important extent here because of their academic interests and I would say in those years, where one could be very, very selective, almost without exception those people ended up in academia.

Klein: I spoke with Dr. Kimball who was a Clinical Associate during that time and who is no longer at the NIH. He made it clear that he felt that the NIH was not a very political place. Do you agree with this?

Metzger: Relative to what? Relative to what was going on at the universities, probably not for several reasons. Certainly the fact that we were a government facility influenced it. Secondly, in those years more so than perhaps currently, people already had families. We weren't sort of the 'bearded undergraduates' and although there were plenty of people with beards and long hair here, it was an older group, a more mature in the sense of older not necessarily in terms of judgment. So naturally they were not going to be as activist. Of course, among the permanent staff there was probably much less activism than at a university because of course first of all physicians as a group tend to be more conservative, and groups and universities that tend to be more activist, like political scientists, historians and so on, we didn't have that sort of a mixed faculty where you tend to get involved with things and then involve others because of their own activities. We didn't have those kinds of stimulations.

Klein: I also found 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 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?

Metzger: Now recall for me who was president during that time.

Klein: In 1967 it was Johnson. In 1969, it was either Johnson or Nixon.

Metzger: OK, let's talk about 67 first. In 67 there was no question, actually I shouldn't say that because I don't have personal experience with other government agencies, but from what one heard about other government agencies, I think that the NIH was a very special place in the sense of having an academic kind of an atmosphere that probably was much more in that direction than at most other government agencies. In part because we have this very large cadre of younger temporary employees which was at that time and still is, quite unusual for other government agencies where basically you have civil service employees, permanent employees. So that's one thing. I think also because it had such a heavy academic flavor in terms of where people were coming from and where people were going to or training themselves for, they came from universities and they were hoping to go back to universities. So I think in terms of dress code it is very different. Leaving aside at that time clinicians still tended to dress up more than they do now, certainly for the people like myself who were not working with patients the dress was very, very different, and still is very, very different than people who are doing the administrative work in some of the administrative buildings. The whole dress code is different. That is symbolic of a less hierarchical more open kind of

system. Now I'm not sure what is meant by that things were getting more 'politicized' by 1969.

Klein: Richard Nixon was the president in 1969.

Metzger: OK, then I do know what that refers to. There was a short period of time, where because of the clear sympathies of the academic community against the Vietnam War. I forget now, but I think about 99 percent or 98 percent of the researcher people were registered democrats and there was an attempt, I gather because I didn't move in those circles, by the Nixon administration where they were allowed to approve appointments such as the director of the NIH or people underneath the director, they started selecting people who were of the Republican persuasion. That was relatively short lived. Basically, there was too much pressure against that sort of thing. In general, partisanship has not been a major influence on the NIH. There has been some, even recently in particular as far as the choice of the director, but not much below that and the number of times where people are selected for high positions and partisan considerations come into play is pretty small. There was that brief period in 1969 that I think that is what the article is referring to.

Klein: Did Congressional interference and the Vietnam budget squeeze in any way hinder your ability to conduct top quality biomedical research at NIH?

Metzger: No.

Klein: What major research projects were underway in your lab between 1965 and 1973?

Metzger: We were investigating the protein chemistry of molecules of immunological interest, both antibodies and by the early 70's beginning to look at receptors for antibodies.

Klein: The Congressional elections of 1966 resulted in a dramatic shift in Congress. The NIH lost much needed Congressional support due to hawkish Republicans. Additionally this new Congress had a different agenda for biomedical research. They wanted a more direct approach because they felt that this would provide more substantial results in a quicker period of time. In my opinion, the U.S. government was perhaps trying to divert the public's attention away from the failing war effort by providing a cure for Cancer or other harmful diseases. What do you think about this theory?

Metzger: Let me say this, that may be a little to simplistic. In point of fact, some of the people who have been most concerned about how the government spends its health dollars have come from the left and not necessarily from the right. So that for example, some of the very strong supporters of providing the full benefits of health care to the population as a whole like Teddy Kennedy, has also expressed concern about research on sort of arcane diseases when point of fact we should be putting in money to see that everybody is vaccinated and that the benefits that are already available in terms of prenatal care and so on are taken full advantage of. It is not a simple issue and one saw the ambivalence and difficulty in knowing what to do or what to fight for much more recently in the AIDS community where they were looking for

a quick cure and then began to realize that maybe the quickest way to cure is to do basic research. I think that there is a real difference of opinion as to how best to meet public needs and that there are good strong arguments on both sides. There is no question that in my mind that just using the knowledge that we already know, trying to change the behavior of the public in terms of everything from exercise to diet to seeking medical care to not smoking etc. etc. would have a tremendous impact and yet I am also committed to basic research. I think that there are some real differences in opinion which have some justification. Now, the other thing that happened that you referred to is this 'War on Cancer.' There again, while it many very well have been that this was in part motivated to provide a distraction, again I don't think it is necessarily that simple. It may have been part of it. One sees the same kinds of opinions now where some of our biomedical leaders including our former most recent director of NIH was very much in favor of "strategic planning," that one should focus in on certain diseases and get people to plan their research and so on. Even now, where all of the institutes are having these blue ribbon panels which are reviewing the programs of each of the institutes and several of these panels are talking about more planned research and so on and so forth. The idea that one can almost legislate progress and research is a very attractive idea and has some validity at the right time but there are also very strong arguments against it. Certainly, against having a system that doesn't allow for people to follow their noses. Many of us who prefer to follow our noses, we are as interested as anybody else in curing disease and so on. We are trying to figure out the best way to do that and having that diversity of approach is much better.

Klein: Just in speaking with other physicians, I have learned that there are often times when you discover one thing while looking for something else. Thus it would seem that if you just had a directed program, you would be missing out on a lot.

Metzger: Well, if you put blinders on, sure. And yes, there is constant talk about serendipity and so on. There is no reason why you can't have serendipity about findings that popup during a planned research program. The question is, what do you do? If you find something, but you are obligated to continue on your pre-ordained approach then you are not necessarily going to follow up on things. Whereas if you don't have that long term commitment to a strategic plan and so on, you find something interesting you say, "Hey, this looks more interesting than what I am doing. I am going to pursue this." That is where potentially sometimes the judgment of a scientist to pursue a new avenue not just to uncover something but to pursue it, if you do not have that freedom, then you could lose out on some important findings, no question about it.

Klein: Another quote that I found was from Dr. W.N. Hubbard, dean of the University of Michigan's medical school wrote, "the scientific community fears the price of rigidity that must be paid if this stable support is to be related to a categorical area of research. The

unpredictable component in creativity can be readily smothered by a soothing mass of mediocre effort if accounting for time and effort is allowed to substitute even in part for scientific excellence.” Was this the general consensus among scientists on the NIH campus?

Metzger: That rigidity would be smothered?

Klein: Yes.

Metzger: Yes, I think so. I seem to recall now that you bring it up that there had to be some accounting for time. But we didn't have this in the intramural program. There was the concern that maybe some of the Universities were funding other things with Federal research dollars. So that if somebody got a grant to pursue certain research, and maybe his or her salary, at that time it would have been his, was coming from the grant but then the university was using either some of that person's time or the "indirect costs" that the university was getting for other things, that that was subverting the intention of those funds and that occurred during that time. That is most likely what that quote is referring to. The whole idea of planned research is an issue that was during that time was a prominent issue, but it is also an issue that comes up over and over again. It is a never ending controversy and I think a very healthy kind of debate. There is no question that the energy, and the resources that are being pushed into biomedical research is the result of a political process of people who are in pain, who are suffering, who want relief for their children or the grandparents from diseases. They are just like the AIDS community, adamant that their tax dollars are going to be used to fight those diseases. That is perfectly appropriate. The question is, "What is the quickest way?" The 'quickest' way is not necessarily what seems the most obvious way. The quickest way to curing cancer may be working on fruit fly genetics, maybe working in zebra fish development because one can make very rapid progress with those kinds of apparently obscure systems that have tremendous implications for the ultimate diagnosis and cure for cancer. I think right now, we are in a much more fortunate situation than was true in the 60's and 70's and even 80's. I think the payoff is getting very close and I think that one is beginning to see that sort of excitement. That's why I think we're beginning to see this enthusiasm for funding the NIH even more. In certain areas we really are seeing the results of that basic research. There is this increased recognition that it is working out and that the direct approach wasn't all that helpful.

Klein: Do you think that there is recognition for the NIH intramural program or for the extramural program. I've come across that the intramural program is getting smaller and smaller while the extramural program is growing. Is the NIH shooting itself in the foot by funding the extramural program? Is it taking away from the intramural program?

Metzger: First of all, the goal of the NIH is not to protect the intramural program. The goal of NIH is to pursue biomedical research as one way to improve the public health. I personally think that it is very important for the NIH to continue to keep its focus fairly narrow in the



sense of what our agencies goal should be is to enhance the knowledge base for allowing one to improve healthcare. Areas of optimizing treatment, or finding out whether something should be done as outpatient versus inpatient outcomes research, and all of these other things are terribly important, but I personally think are not appropriate for the NIH to pursue. We should really try and focus on building the knowledge base. Now the question is how best to do that. In the beginning, the NIH only consisted of “intramural laboratories” and the grants program really did not start in a big way until after World War II. Certainly with the training of scientists and particularly with this wonderful system which we have in the United States which is almost unique, of not only allowing but encouraging and fostering the ability of physicians to do science that use to be unique to the intramural program but no longer is unique. There are now plenty of places around the country where this can be done. So then the question is, “Is there any special role for the intramural program as opposed to the extramural program?” That is something that we are to some extent still struggling with. Although there are some of us who wonder whether a lot of time is spent on what shouldn't be a struggle. In other words, we know that the intramural program works very well. We certainly have to keep alert to try to keep it a good program. But when something works why spend a lot of time trying to justify it. It works! Is it absolutely necessary? Would biomedical research in this country suffer irrevocably if the intramural program was disbanded, which some people thought should happen. Probably not. In some areas maybe yes. For example, it is going to be relatively easy given all of the infrastructure of the NIH intramural program to implement the president's AIDS vaccine initiative on campus here. It could be done somewhere else, but I think it may be easier to do it here. Just like there are some of us who feel that the role of the intramural program should be a little bit like some of the other national laboratories, meaning the Department of Energy, The Department of Defense and so on, where there are national facilities to which non-federal researchers can come for certain special resources. The new Clinical Research Center is being thought of as that sort of a potential resource for the country. So, having a single sight where you have a very high concentration of talent across the board in biomedical research works. It is attractive to some people because it isn't exactly like academia, some of the responsibilities that one has in academia are not here. Many of us feel that there is a continuing role for the intramural program and actually it has not shrunk. It has decreased as a percentage to the whole, but it has not shrunk. There are more scientists working on the campus here than there ever have been. The amount of science that is being funded intramurally is not down it is up compared to former years. I think this is a continuing area of controversy and difference of opinion and I think that is very healthy but my guess is that there will continue to be an intramural program here. The system works. It is just like asking, “Could the country do with out a Harvard?” Sure it could do without a Harvard, but why not fund Harvard?

Klein: So what has kept you here?

Metzger: What has kept me here was some wise words that my mother-in-law once gave me when I was considering a move. She said, 'You move when you are unhappy not when you are happy.' I've been happy at my work, it has gone well. I have had very good support. The community is terrific. It's just a wonderful place to work, so I have stayed put.

Klein: Could you evaluate for me the RA program and the CA program to the best of your knowledge. What do you think this program has to offer its participants, the NIH and the medical community? What influence did it have on U.S. biomedical research in general?

Metzger: I'm not sure if you are distinguishing the RA and CA programs here compared to postdoctoral fellowships or trainee fellowships elsewhere. I'm not sure that there is that much to choose between them. They obviously, compared to any other place, were larger. They probably had a higher number of experts in any particular area that one could think of than any other institution. That does not mean the concentration is higher, I am not claiming that by any means. But just in terms of sheer numbers of excellent people, diverse internationally recognized people across a whole broad spectrum of biomedical science, we are probably unsurpassed. To the extent that a young person can avail himself or herself to those resources, it is probably in that sense an unsurpassed training atmosphere. I think that there are also certain things that are missing from here. We don't have undergraduates, we do have some. We don't have graduates, again not a lot of them, we do have some. Of course the younger the people are the more likely they are ready to ask "foolish questions" which in fact may challenge one to rethink issues. Certainly having spent a couple of years as a post doctoral fellow at a university after I was here, there clearly is a difference in the atmosphere and I enjoyed that. I don't know at how many other places that for individuals who have a combined clinical scientific interest, much more than I do, the atmosphere is unsurpassed. But I think for the Clinical and Research Associates that is less important than for the people who have positions here. I think the ability for people in the intramural program to retool themselves, to change directions, is much greater than if you are dependent upon grants. The kind of 'dip' in productivity that naturally has to come if you are going to retool yourself and retrain yourself and go into a different area, that is much more difficult to fund and support on the outside. When I originally came here, the Clinical and Research Associates Program were unique, but I am not sure they are unique now.

Klein: Actually, I found some research that stated that the numbers of applications for the CA and the RA program has dropped dramatically. I was wondering why that is the case since former CA's and RA's are holding high positions here at the NIH as well as all over the country. Why the drop off?

Metzger: Well we would dearly like to know. I think that certainly the most important reason is that there are now lots of other places for people to go. That is number one. Number two, the

number of applicants that we had for post doctoral positions was certainly exaggerated, amplified by factors such as the physicians draft. Whether statistically that holds up and whether once the physicians draft was eliminated there was a sharp drop, I haven't seen those graphs and I would have to be sure that that correlation was the only thing. I think in recent years, there certainly has been a certain amount of discouragement among those people who are not absolutely driven to do biomedical research. As was true of a lot of us, I am not sure whether I would have come here in the 1990's. While academic medicine was something that was attractive, I never had the feeling at that time that this was the only thing I wanted to do and that I would put up with all sorts of privations in order to do it. First of all, by the time we came into biomedical research there were no longer those privations there was always a differential in what you could earn in private practice as opposed to in academia. That still of course is true, but in point of fact, in academia research you can earn a comfortable living and have enough to educate your kids and live in a nice home, buy some books and do some traveling and so on. It is a pretty comfortable life not like it was in the 30's and 40's when people were really as "poor as church mice" if they wanted to pursue research. Nowadays, people who don't have that sort of calling, a research career is not as appealing as it was because of the uncertainties of funding, and the time to do the research. I have a son who is a psychiatrist and would like to do some research and is at a very good university-based hospital but because of managed care and so on, there is just no time. That is very discouraging. So I think that that is another reason we have less applicants. Is there a perception? I recall Harold Varmus being quoted saying that his graduate students just wouldn't be thinking NIH when it came time to think about a post doctoral fellowship. That may very well be true, but I don't know why that is true. I think that institutions do have ups and downs and there is no question that there was a tremendous expansion of the NIH in the late 50's and early 60's, and many of us are still around. We are growing older and may not be pursuing research that is quite as much at the cutting edge as maybe at some of the better universities and that is true at most institutions particularly at institutions that go through growth spurts or that have major changes. There were, when I was in medical school at Columbia, some departments that were superb and some departments which were lousy and other departments which had been superb but where the people hadn't turned over yet. There is going to be a tremendous turnover here, which has already started the demographics just show you that. I think that we now have personnel mechanisms in place where I think the young people coming in on the staff are absolutely superb where there is a lot of competition for those jobs. I think those people will and those people are attracting very good post doctoral trainees. To the extent that there may be some sort of dip because some people think that the NIH may be a less attractive place to work, if that is true at all, that may be related to the demographic situation which will change.

Klein: In my research I've come across some opinions that part of the reason the Clinical Associates Program's applications are falling is because there is a disrespect on the part basic research scientists for clinical investigation. What are your feelings on that?

Metzger: Well, I have been very actively involved in those discussions. While in all of these situations there is always some kernel of truth, it isn't black and white. I think that the difficulties that clinical researchers are experiencing or perceiving that they are experiencing, is a much, much more complicated situation. Probably one of the least important factors is any aspect of disrespect or lack of support. There is an intrinsic difficulty in doing clinical research which is very difficult to alleviate. Clinical research, by its very nature because of certain kinds of limitations which are inherent in clinical research, often can't come with the kinds of crisp answers that you can in laboratory research. There are things that one can do in laboratory research that give very definitive answers, very basic answers that simply can not be done clinically. That of course is intellectually exciting, whereas the kind of less definitive kinds of results that one often gets in clinical research, is by its very nature somehow intellectually less satisfying. Even though, emotionally and from the point of view of a physician dedicated to curing a disease, it's what it's all about. I think there is no question that there is a certain asymmetry there and that people are honored for the great discoveries that they make and it's hard to make a great discovery clinically. Once the pay off comes, and lets say the thing that was in the newspaper about Judah Folkman's things about angiostatin and endostatin, if that were really to work and some of that clinical research that is going to be done is successful there will be plenty of respect paid. There is no question about that. So there is that aspect to it but it is more complicated because lab research in certain areas is more incisive, is more easily done, a lot of the younger bright investigators are deciding that that is the way, the best and quickest way to accomplish what they want to accomplish which is to work on human diseases. They may be making the right decision, I suspect that they are. Unfortunately I don't have it here, but what I was going to show you was a protocol that was just given to me by somebody who wants to just do a relatively simple but sophisticated study using a new reagent in Lupus and the protocol is half an inch thick! The amount of paper work that needs to be done just in preparation for doing the experiment is enormous. Whereas, if I wanted to do an experiment in a laboratory even if it requires animals, and even if it requires radioactive isotopes, the amount of paper work that I need to do in order to conduct the experiment is very small. The number of people who have to sign off on it and the number issues that I have to consider in terms of patient consent and ethics and safety and so on and so on, is nothing compared to clinical research. It is just enormously difficult in clinical research. Particularly if you don't think that you are going to get a crisp answer and really build or learn something exciting and new it becomes a little bit discouraging. That has a lot to do with at the moment with the lesser amount of activity and lesser willingness of

people to go into clinical research. There is no question that there is some feeling and probably correct that the grant applications for clinical research from the outside community are not being judged by people who understand the complexities of clinical research so they are not getting as high scores or good scores one should say as laboratory research. All of these things are contributing but I don't think that the lack of respect is the principle cause. I think that is a misconception but a very widely held perception and I happen to think that it is misguided. But I have certainly been told that from my own people despite the fact that I have tried to indicate that I feel otherwise they don't here that. No question about it.

Klein: What do you think that the NIH can do in order to revamp the RA and the CA programs. Obviously we don't want to have another war.

Metzger: Well that I don't know that the programs need revamping. We have got very good training programs. I think we should just continue what we are doing. There are people here who want to create a graduate program on campus. I don't happen to be one of them, but I am not necessarily opposed to the logic of these people. I think that particularly if one could develop a graduate school that had a special niche such as a graduate school for people who don't necessarily want to become a "full fledged doctors" but want to pursue a Ph.D., a training that would equip them to pursue clinical research in collaboration with a physician who would be largely there in a support position, that I would be very enthusiastic about.

Klein: I haven't heard anything about this.

Metzger: Right now in fact, we are recruiting for a head of the Office of Education and one of the requirements for that position is to explore with Congress because ultimately it will take legislation to do it, the possibility of develop a graduate program here at the NIH. That would certainly give us a boost, particularly if we are not going to be competing with other graduate schools which has been my concern. I think as long as we strengthen certain aspects of our program which by nature tend to be stronger at universities. Something that we have not given specific attention to much in the past here is career counseling and mentoring and so on. That's becoming increasingly important and I think we need to make sure we give that to our trainees. When the word gets out that that is being done well here, I think this will continue to be a very attractive place to work. It certainly is for people from overseas. I am not too worried about necessarily having twenty applicants for every job. It's nice when you do, but it doesn't mean when you have a small applicant pool that the people that you will be actually getting are necessarily any worse. I don't really see that the program needs any revamping.

Klein: Is there anything else you would like to comment on that we might have missed?

Metzger: I guess one thing that may be a factor in thinking about why people sort of refer to the good old days as opposed to now may in part be related to having almost too

much success in the sense that this is a much larger place than it use to be. At the post doctoral level, people don't have as much contact with senior staff and as broadly as use to be true. People I think are a little bit more isolated and a lot more specialized than they use to be. So, some of that sort of intimacy that was there when sort of everybody knew everybody, or you knew more people outside your area than may be true now, that was very nice but it's changed. There may be a certain amount of nostalgia for that.

Klein: Well part of what makes this institution unique is that you have all of these great people in their specialties all on one campus. So if you do need to contact or collaborate with some one it is a lot easier.

Metzger: Sure, but you also pay a certain price for it. One sees that at all levels of life. I happen to live not very far from here and we have an incorporated village because people like that feeling of intimacy. So small is beautiful and the NIH intramural program was smaller. There were a lot more trees and a lot less buildings and you knew people on a first name basis, more people across different institutes and it had a nice flavor to it which to some extent is missing now. There is more bureaucracy and so on.

Klein: Thank you.

*End of Interview*