The Task Force on Women, Minorities, and the Handicapped in Science and Technology was established by the U.S. Congress in Public Law 99-383 with the purpose of developing a long-range plan for broadening participation in science and engineering. Public hearings were held in Albuquerque (New Mexico), Atlanta (Georgia), Baltimore (Maryland), Boston (Massachusetts), Chicago (Illinois), Kansas City (Missouri), and Los Angeles (California) between Fall 1987 and Spring 1988. The final report of the task force was produced in December, 1989. This document is the verbatim transcript of the public meeting. Co-Chair Dr. Ann Reynolds conducted the meeting. Discussions include: (1) An opening statement; (2) a statement from President May of the University of New Mexico at Albuquerque; (3) reports from the subcommittees on social aspects, precollege education, higher education, research, employment and the National Agenda; (4) a progress report of the subcommittee in general; (5) logistics and procedural questions; and (6) preparations for a meeting in Chicago. (CW)
Public Meeting

1634 University, Northeast
Albuquerque, New Mexico

September 22, 1987
TASK FORCE MEMBERS:

MR. JAMIE OAXACA, Co-Chairman
DOCTOR ANN RYNOFS, Co-Chairman
MS. SUE KEMNITZER, Executive Director
DOCTOR HOWARD G. ADAMS, Member
MR. JAMES A. BIAGLOW, Member
MR. FERAL BISHOP, Member
DOCTOR JO ANNE BRASEL, Member
DOCTOR ALAN CLIVE, Member
DOCTOR MARY E. CLUTTER, Member
DOCTOR JOSEPH G. DANEK, Member
MR. HERBERT FERNANDEZ, Member
MS. CLAIRE E. FREEMAN, Member
MS. STELLA GUERRA, Member
MS. AMORETTA H. HOEBER, Member
DOCTOR HARRIETT G. JENKINS, Member
MS. ANTOINETTE G. JOSEPH, Member
MR. ROBERT CYRUS LAUGHTER, Member
MR. ROBERT H. MORRIS, Member
MR. RAUL ERNIE REYES, Member
DOCTOR MIGUEL RIOS, JUNIOR, Member
MS. GLORIA R. SABATINI, Member
DOCTOR LAWRENCE SCADDEN, Member
MR. NATHANIEL SCURRY, Member
MR. ALVIN THOMAS, Member
MS. SONIA MEJIA-WALGREEN, Member
MS. MIRIAM (GULLY) WALTER, Member
DOCTOR LUTHER WILLIAMS, Member
MS. VERA (NINA) WINKLER, Member

***

DOCTOR REYNOLDS: Good morning. Welcome to all members of the Task Force. We are glad to see you here at this early morning hour. It's earlier for some of us, like those of us from west coast than those of you from the east coast, but you all look fresh and bright. I have a couple of items I want to cover before we move on into the agenda. I think most of the
members of the Task Force are aware that this group is being
co-chaired by Mr. Jamie Oaxaca, who is to my right, and
myself, Ann Reynolds. To my left is Sue Kemnitzer, who is the
staff to the Task Force, and who with her colleagues has been
responsible for getting everything ready. See Sue if there
are any problems.

A couple of housekeeping details. At least one
co-chair of each subcommittee is expected to attend every
hearing. This individual needs to be here in order to report
on the progress of the subcommittees. If you are a member, we
agree to do a great deal of work of the Task Force by this
committee structure, and secondly, this individual is expected
to lead questions during the committee -- during the hearings
that represent concerns or the particular needs of the
subcommittee in developing its report.

Secondly, and this is one that this item has
caused some concern, but I think it's a very important one, if
appointed members of the Task Force do not attend, a
substitute or staff person to this member can attend but may
not substitute for the member. Only appointed members are
empowered to participate. That's because each of you on the
Task Force has been appointed by a representative agency. Your
input is, of course, critical both in deliberations and the
final report, and you are in a sense the appointee, the
designatee, the approved person from that particular agency.
I'm delighted that I believe we have twenty-eight members of the Task Force here today out of forty-five members, which is a very, very good attendance level at a busy time of the year, and at some considerable travel distance and so forth, so I feel we will be able to have enough major significant participation to get our work done.

Thirdly, we would very much appreciate your responding to the request for names of people to be informed of the balance of the hearings who may wish to testify. I know you are sympathetic with Ms. Kemnitzer's need to get these names early so people can be contacted and coordinated for the Task Force hearing such as the one today. I was very impressed with the roster today, but it has taken a good deal of coordination, so please let us get the names from you either today or within the next week.

While we proceed with the hearings today -- I want to phrase this delicately, but I know you will be sympathetic to it. The hearings are to elicit information and to understand viewpoints, and if you will, to enable us to sense the pulse of the country on these important issues. We are not here to challenge, argue, intimidate or correct people's data base, so it's important we understand the good will of the people testifying. Sometimes they may possess a bias or some of their impressions may not be in accord with things you know are true from your own work, but we do need to understand
the spirit in which these witnesses come forth.

I have been told by staff to impress upon all of you that the hearings will start at nine thirty AM sharp this morning and hereafter. We have a very heavy agenda, and we must work long on it. I would like to break now to indicate that President May from the University of New Mexico is with us this morning. President May, would you like to -- I think they can probably hear you. You are probably more used to this room than I. We are glad you could come out in such an early morning hour to welcome this group.

PRESIDENT MAY: My pleasure. Thank you very much for coming, and I would like to say just a word of welcome to all of you, and this particular subject that you are to address here in the next -- will you be meeting here two days or just one day?

DOCTOR REYNOLDS: Just today.

PRESIDENT MAY: A subject that is particularly close to my heart, because as Dean of Engineering at the University of New Mexico I tried to work this problem very hard for a number of years, and I note some familiar faces around this table, that we have worked together on this problem. I'm very glad particularly to host you here at the University of New Mexico. I think it's very appropriate that you're meeting here in New Mexico because we have many cases of microcosm or perhaps even an exaggerated portion of that problem here. You will find
Wayne Matthews telling you, from the Commission of Higher Education, of our demographics in this state, how we are forty-six to forty-eight percent minorities and how those demographics are already changing. That in a few years that minority will now be the majority, and obviously with the National Laboratories of Sandia and Los Alamos and with the missile range, with the very large base aerial scope and the ground base, free electron laser and the observatories and so on, I think that I can say that our very -- our single largest business in this economy here in New Mexico is research and development. So we have not only a large number of minority resources, human resources, but we also have immense opportunity here in this state.

Many years ago we recognized that this was a specific problem in trying to get young people to participate and to have the opportunity of having these attractive jobs in science and engineering, and we obviously also know that those are difficult fields. The math based fields are difficult fields that require a great deal of motivation. We have worked that problem for many years. You will hear from Richard Griego from our university, how he has tried to work the problem right down into the grade schools. We found as we started to try to -- as we looked around, we saw how underrepresented minorities were in these not only professions, but also in our schools. We recognize that we
couldn't sit and be passive, and as we started to work those
problems as far ago as ten years, why, we found that you
couldn't stand by passively and simply expect the problem to
cure itself. So we have started many programs, and through
the years we have tried many, many programs that have had
national affiliations that have tried to address the local
problems, and all of you who have tried to work that problem
around this table will recognize how very difficult that is,
how you start with building the proper kind of interest
structure, the proper kind of foundation.

We found that we had to provide the kind of role
models that young people from minority homes didn't have.
People like Herb Fernandez were very few and Jamie Oaxaca were
very few in our profession, and so our young people didn't
have those role models. The parents didn't know to direct
their young people into these math-based professions. The
teachers, the counselors, they weren't prepared adequately
when they came out of high school. They weren't motivated
properly. We found that we had to go down into the ninth and
tenth grade to provide summer programs that would try to
motivate these young people. We found that we had to.

Then even if they were successful in high school
and were motivated, you have to provide the free programs into
the colleges. We found that we had to put in special
retention programs to help them be successful once they came
to college. We had to provide peer support. We had to provide special counseling, all of those things. Finally we had to provide special financial aid packages. We had to finally provide links with industries so that they would then be able to find positions once they graduated. It's a long and hard road, and I think that what you will hear today will be some success stories.

I hope you will hear from Jim Tarro. I see he is on your schedule to tell you about a very exciting program we started five years ago that was modeled along a California program called MESA, Math Engineering Science Achievement, and how we found that we had to go down into the ninth grade to work with about six hundred young people in this community starting in the ninth grade and try to get them attracted so that they could be successful, and they are. The ones that have already graduated, almost a hundred and fifty, a hundred and seventy-five, ninety-seven percent of them are now in higher education somewhere, and most of them in engineering and science.

So we find that it's a very difficult problem in working, but a very worthwhile problem. In fact, it's a necessary problem. I don't need to tell you that we have to do that for social reasons and for economic reasons. That we have to make sure that we don't disenfranchise any portion of our population. We have been -- in spite of all that work, we
still are a long ways from being successful in the sense of what we call success for parity participation. The University of New Mexico, in our College of Engineering, we are at about thirty-percent minority and about twenty-percent women, and the women story is just as difficult in providing role models and early counseling to help them to be — to view engineering and science as a viable alternative, so I'm sure you will hear all that today in much more detail.

I hope that you will be able to help us as you prepare your report, and as you go around the country to hear these kinds of things wherever you go. I hope that you're able to also impress on our national leadership how important this problem is and how it has to be worked and how it has to be supported at every one of our institutions. I don't think I exaggerate also to say that our educational institutions are at the forefront, are in the trenches of that battle of trying to work that problem right where it starts, and that is getting young people successful right from the start. So I welcome you here. I welcome your participation. I hope you have a comfortable stay, and if we can do anything for you, we would be happy to do so. Thank you.

DOCTOR REYNOLDS: Thank you very much, President May. We appreciate you coming by and we appreciate the hospitality you have extended.

PRESIDENT MAY: Our pleasure.
DOCTOR REYNOLDS: I will keep going then because we have a fairly good-sized agenda. That's the reason we got you all up so early this morning. There will be a lunch break. You are glad to hear this, I'm sure, at twelve thirty. When that starts, if there are press here Mr. Oaxaca and I will be meeting with them at that time if requested. We would ask that if there are press questions they be deferred to the two of us if at all possible. The hearings resume at one thirty PM sharp. I have been asked to get my staff to make sure that happens so that we can get everything achieved during this very busy day. Any questions or concerns on these issues from members of the Task Force? Very good. I would like to note especially two members of the commission who are from New Mexico. Mr. Herb Fernandez and Mr. Miguel Rios. One on each side. We are counterbalanced on each side from our host table. We really appreciate you being here.

Let us move on then to the subcommittee reports, and I do need to keep each of you to ten minutes or less, hopefully less if we can. Let's begin, first of all, with social aspects, and that will be given by Mr. Clive.

MS. FREEMAN: I'm Claire Freeman.

DOCTOR REYNOLDS: I'm sorry, Claire. She gave me a quick name here. Claire Freeman.

MS. FREEMAN: I'm the co-chair of the social aspects subcommittee. To my left is the other leadership component of
this subcommittee. We have held one meeting, and it was a very stimulating, successful meeting I think. At that meeting we discussed what we thought would be our agenda for the next couple of months, and the first item on the agenda was to review the literature. To our pleasant surprise, upon looking at a study underway at the Department of Defense through the Department of the Army we found that Huston-Tillotson College in Texas had been funded to the tune of some two million or more dollars to do a study of the social factors impinging on minority students in staying in science and engineering careers. They did a yeoman's job of compiling a review of the literature with some three thousand or more pieces of literature reviewed. Also, they are beginning the intervention strategies of their particular study. They are on the agenda today to report to the monument Task Force.

Secondly, I requested from the members of the Task Force a list of three or more social factors that they consider to be principally important in stymieing the career of a minority female or handicapped person in the science and engineering field. I received comments back from Gloria Sabatini and also Alan Clive, and my office also submitted a rather comprehensive review, so we need comments back from the rest of the subcommittee with respect to those shortly and we will be sharing the reports. However, let my office know, Clive's office and Doctor Sabatini's office because the rest
of the subcommittee and whoever else is interested. If there
are any questions, that's the gist of my report. Alan, do you
have anything to add?

DOCTOR REYNOLDS: Thank you. Questions?

MR. OAXACA: I have a question. Are we going to be able
to get the army folks to -- you know, that have some of that
corporate memory on the report? Can we put the arm on them to
perhaps help us a little bit after we start performing the
first draft to get the salient points out of that if it's such
a voluminous thing?

MS. FREEMAN: Yes, indeed. As I indicated, there will be
a representative of Huston-Tillotson College here today, and
the reason that we invited the college to present today was so
that we could get an idea of the breadth of their study and to
be able to pinpoint what areas we want to know more, so we
won't have access to that study as much we would like. Alan,
would you like to say a few words?

DOCTOR CLIVE: Well, Claire, I think you have really hit
on it. We are still in the formulative stages of our
thinking, and as you know, I haven't had a chance to look at
all the comments that have come in. Once we have all of those
in hand, I think one of the next things we will be doing is to
try to see if there are any practical solutions that can be
applied to dealing with these factors, and if not, try to
assess what kind of impact they are going to have on our
problem, but at this point that's really all.

DOCTOR REYNOLDS: Thank you very much. We will look forward to further reports from you. The second committee is precollege education, Doctor Larry Scadden.

DOCTOR SCADDEN: The two true co-chairs were unable to come, and I was the designated as a member of the subcommittee to report to represent the group officially here today, though Bob Morris is also here. We had a meeting early in September in Washington. We struggled with the fact that if we are going to be an active subcommittee on a regular ongoing basis, how best to bring in the information and the expertise of committee members who are scattered all over the geography of the country. We do plan to meet periodically in Washington, but we also plan to meet whenever possible at a time of the Task Force meetings. The core group, however, met at this point, Washington based group early in September in Washington to discuss what our objectives should be and will be for the precollege subcommittee.

We seem to come to a consensus as a group that not only do we want to identify the exemplary models, identify models that President May was talking about which have been implemented here in the Albuquerque, New Mexico area of finding ways to encourage kids from grade school on up through high school to encourage them to consider science and engineering as careers, but also to reinforce that
encouragement with exemplary programs of support to ensure that minority students, women and disabled students will be able to have access to laboratory experiences, to be able to formulate career ideas and be able to carry through with those opportunities in the future.

We know that there are exemplary programs. We know that they are often supported by the school districts with augmentation from industry, with summer programs of industry and federal laboratories and so forth. We want to identify those exemplary models, learn as much about them as possible, but simultaneously at the earliest possible time in the existence of the subcommittee to begin to formulate ways in which this information can be disseminated throughout the country to groups and to individuals who can serve as agents of change. We have identified these groups and individuals as being located in both the public and private sector. Obviously the federal government, the Department of Education but probably more importantly, state and local educational agencies, and industries within the local communities, and their larger trade associations, I can encourage them to participate providing mentor tutors and experiences, whether it be weekend or summer-type experiences.

At this time, we have divided the sector of these various sectors, assigned them to individuals on the subcommittee to establish contacts with these groups. We will
be meeting with them periodically. For instance, in October we have been able to get key representatives from the -- I don't remember the names of the organization, but it's the Association of State Educational Administrators, Washington based group as so many of the national groups are, and one of the leaders will be talking with us on how best we can work with them to use them for information dissemination group and also stating in the education field that that meeting will have a representative from another group that the name of which I will not get exactly right, but it is the Association of Large Local Education Agencies. I gather that the large cities, the large school districts in the country have created their own association, and we will have one of their leaders to talk to us as ways in which we can hopefully, within the period of the existence of this Task Force in the subcommittee, begin to work with individual school districts in replicating some of the exemplary models. If there's any questions, I think Bob and I both will try to answer them.

DOCTOR REYNOLDS: Very good. Sounds like you are off to a good strong start. The next subcommittee is higher education, Doctor Danek and Doctor Adams.

DOCTOR DANEK: Thank you. Our subcommittee met one time in September. A number of activities have been started. I think we are off to a good start, also. We have developed a charter or more appropriately I think you might call it a work
plan for the subcommittee, which we think is consistent with
the overall committee objectives, but speaks more directly to
the specific charge of the committee to take a look and
address the needs of minorities, women handicapped in higher
education. We view our ultimate objective as trying to help
initiate, put into place a series of actions which over time
will result in an increase in the participation of women,
minorities and the handicapped in pursuing science and
engineering careers.

What we have basically done, then, is to set forth
what we consider to be five basic objectives that we think
that we need to present some action programs. The first is
increasing awareness among higher education, industrial and
federal officials of the need of the current status of women,
minorities and the handicapped in science and engineering, the
need to join together to enhance opportunities for these
groups in higher education which lead to careers in science
and engineering, and we have begun to put together some
summary data. We do not believe that we need to do a full-
scale study. There is enough data which gives us a pretty
good picture. Betty Vetter over here is one of the experts on
women in minorities and science and engineering, and we don't
want to preempt her data base. We are going to look at that
very carefully, and the National Science Foundation collects
data, so we are going to be looking at putting together :
summary of the current status of women, minorities and the handicapped and we should be able to report to you on the summary of that in October.

We think the next aspect that we would like to look at which fits with the charge is the development of better understanding among a greater number of people of the real value of the fact that specialized programs and intervention programs do really work, such things as mentors' programs, scholarships, et cetera, and to take more careful look at the relationship to these special activities to the retention of minorities, women and the handicapped, and this all relates to the first objective, more or less, which is increased awareness. Certainly the existence of this committee and these hearings are clearly one example of the kind of activities that could be conducted.

The other aspect where we believe that we will probably spend the greatest amount of our time is to identify and disseminate information on exemplary programs. The same sort of thing has occurred which exists in higher education and within the federal government, focusing on women, minorities and the handicapped, and I would like to report that there really -- there are two things that have happened since we have met last. NSF has just released a hundred and fifty thousand dollar grant to AAAS, American Association for Advancement of Science, the Office of Opportunities in Science
and Engineering, to do a study of the fifty top research institutions in the country, to take a look at what exemplary programs we have for encouraging women, minorities and the handicapped. We expect that within a year we will be able to hold a national conference on that to bring people together.

The second thing is that the NSF, again, has and partly in response to this committee, but partially because we considered it a need prior to this, has put together two programs that I think you all ought to know about, and that is two programs for trying to encourage the dissemination and the implementation of exemplary programs. We have two grant programs which will provide seed money, small grants to people to identify exemplary programs and to implement them and put them in place in new settings, so those programs will be on board in fiscal '88, and we would encourage all of you to take a look at those. The other thing that we are doing is to try to take a look at the federal agencies, and we have put together a rather simple table that I think is going to get a lot more complex as we go into the agencies which basically says can you categorize all of your minority programs, your women programs and handicapped programs, one sheet for each of the groups.

It basically would display the program, the position of the programs within each agency, along the pipeline on one dimension and then along a second dimension
which would be an education and training dimension through a 
reserve function. That is, if the purpose of the program is 
to enhance the capability of individuals at K through twelve, 
it would be education slash training. If along the other end 
of the line with regard to faculty, one would have faculty 
enhancement programs to increase their mainstream to do 
research here in the research category. So we are testing 
this now in the Department of Education.

NSF has it, is taking a look at it. We have got 
Kathy Perry looking at it in the Department of Energy. We are 
doing it the NSF, and we would like your help in other 
agencies to see if we can then pinpoint some of the 
activities. I think if we do that, we then feel that we can 
begin to talk to agency heads about where the gaps in their 
programs or where the overlaps with other agencies were, some 
opportunities that we might take advantage of. There is also 
another area that we are looking at, and I will let Howard 
report on that, and that is a survey of students in 
ingineering as to with regard to what sorts of interventions 
they believe work.

DOCTOR ADAMS: Since one of our functions hopefully is to 

enhance the participation of minorities and women and 

handicapped in science and engineering, we thought we would 
take a look at what students had to say to us. I am working 
on an instrument that we will use to visually, actually,
survey students around the country on why they actually majored in science and engineering, what some of their problems are, what kind of interventions do they feel like would have been beneficial to them, and then what kind of recommendations would they make to us if they knew that there was some organization who was looking at the kinds of issues that we are looking at, what would they have to say, and we hope to do this by using the instrument, one, with organizations such as the Society of Women Engineers, the AISES program, which is the American Indian Science and Engineering Society, Mexican-American Engineering Society and NSBE, National Society of Black Engineers. We are going to do it with them.

We also -- my organization that I work with will hold a series of ten conferences around the country this fall on college campuses dealing with graduate education, so we are going to be seeing a great deal of seniors and juniors who will be coming to this workshop. Hopefully somewhere in the neighborhood of about fifteen hundred. We hope to have this instrument available at this time when these students register to gather this data, so this particular report would not be available for us at the October meeting, but surely we hope to have this material ready for us by at least December of what students have to say to us about what our activities ought to be about.
DOCTOR REYNOLDS: Thank you. Questions? You're off with a running start. That's excellent. The next subcommittee is in the research arena. Doctor Clutter?

DOCTOR CLUTTER: Thank you. I don't know whether everybody can hear me. Probably can, but I will use the microphone, anyway. Like most of the other committees we have held one meeting, and we were able only to get people in the Washington area, but we thought we better get started. So on August 24th we had a meeting at the National Science Foundation. I was able to twist the arm of Eric Block, our director, to join with us, and he gives us his full support, and I think those of you who have heard him speak since that time, and if you have the occasion to be hearing him speak during the coming year, will notice that in every speech he is going to talk about the need to attract more women, minorities and handicapped to science and engineering careers. He has made that his number-one priority over the coming year, so I think that we can expect to get a lot of help from him.

At our meeting we decided, as the other subcommittees have, to focus on the objectives that we feel we can achieve during the coming year, and the first phase, of course, is information and collection, and I brought along a few examples of the kinds of things that we have been able to collect. Now, remember that we are looking at programs that offer research support, so that we are looking at that end of
the pipeline where people are already in careers as scientists and engineers, but what we want to identify are those programs that offer special support, and so, for example, at the NSF we have some brochures that describe all the programs offering the research opportunities for women. We have a brochure that describes the research opportunities for minorities in science and engineering and on and on.

So I think that at the foundation we won't have a problem identifying all of the programs, and we are in the collection phase, so we are collecting this information from other agencies, but I think very importantly we are going to try to get this information from private foundations, and state and local governments and universities, and I have assigned this task to one of the people at the NSF who is responsible for our states' initiatives, and so we hope you will be able to get that kind of information. I think in the end, though, the upshot of this should be some information about what the impact has been on all of these programs that have been in place for a number of years now, and I think that's where it's going to be a lot more difficult, because very few of these programs have actually been evaluated to full effectiveness, and I don't know whether we are going to be able to do that, but we are going to take a shot at it.

The thing that we have already found is that there is very little coordination, very little communication among
the various agencies of the federal government, and certainly very little communication between private organizations and government organizations that support these programs, and so I think one of the best things we can do is try to increase the communication and the coordination among these programs, but another thing that we discovered at our first meeting was the fact that in the federal agencies the peer review system that is used is quite different from agency to agency, and so what we are going to do at our November meeting, because we have scheduled two full-scale full-day meetings of our subcommittee in the months when we are not having hearings, and at the first one in November, we are going to discuss peer review and how it operates in the federal government for all of these programs. So that is pretty much what we have done so far. I would hope that we will be able, my subcommittee, to get together at this particular meeting, and so I will take this opportunity to invite everybody to have lunch with me because I don't know when we will meet otherwise. Thank you.

DOCTOR REYNOLDS: Thank you very much, Doctor Clutter. Any questions? I'm pleased with all -- with the beginning that you have all achieved. You all met. You are starting to come together. You are off and running. I almost forgot the last and most critical one, employment. I was getting too eager. I had in mind that if we kept moving at this pace, and I'm sure we will, we will have a chance for a brief break
between now and when the hearings start. The major reason for all of this, employment. Ms. Guerra, Mr. Thomas?

MR. THOMAS: Thank you. We have had one meeting, and the purpose of that meeting was a planning session. Recognizing that the Congress has identified some five objectives, we thought it was best to try to scope in in terms of what we saw were objectives. We have not had a meeting yet with the full committee. Plans are to have one during the week of three October. We have essentially identified immediate goals and we have also identified some data bases by which we hope to collect data, and Stella will share with us some of that data.

MS. GUERRA: One of the things that as we sat around with Sue and Alvin and myself planning, it became very evident that if we are going to really open the door for minorities and women, particularly in the area of employment, and look into the problems that we are facing today that we definitely needed to include one of our agencies that I see as playing a very critical role in employment, and that's the Office of Personnel Management, so we contacted Mr. Curt Smith, who is the associate director for career entry programs at OPM, and has joined the Task Force. To date he has sent a representative, Fran Lopez, who is with us from Washington. We consider it critical that if we are going to look at opportunities or what needs to be done in the area of employment, we need to look at the existing regulations that
the federal agencies have to operate under. Oftentimes there are things that are time consuming or that make it less attractive, and particularly when we are talking about competing with private industry in government. So this is going to be a big area in looking at the current status.

One of the things that I will add is that since our meeting, June 30th, I have had the opportunity to visit four different countries, then different states and deliver about twenty-two major addresses. I have taken the opportunity on each occasion to talk about the Task Force and what we are doing about employment in science and technology areas, and I can't think of anything that is more timely than our getting together, because there is great interest generated and great concern for the future of the work force in America. I don't have anything else to add, but if you have any questions, we will be glad to answer them.

MS. FREEMAN: I have a question of the employment subcommittee. The defense manpower data center is the gatherer of all stats for the Department of Defense, and we requested of them a compilation of the number of women and particularly women, but women, handicapped persons and minorities in the science and engineering careers so that we can get a look at how they have won out, and they can do that for us, but we ask that this Task Force further define the pertinent series of jobs. That is, to further define what do
we consider to be scientific and engineering careers because it makes a difference in how the stats fall out. For example, computer technicians, you will find an awful lot of women in the computer technicians field and on the health side of the problem you will find a lot of women in the nursing career, and they tend to fall at the bottom of the GS wage grade level. So we need to kind of like fill those particular occupations out and further clarify what occupation in the GS ranking should we use in the analysis of scientific and engineering careers. That would help us, and the social factor of the subcommittee really get to the bottom to get a clear idea of who is in the work force in scientific and engineering careers in a much more articulate manner. Right now it's kind of hit or miss because of the unclarity of the job definitions.

MS. GUERRA: That's true, and also with the Department of Labor statistics for other agencies. One of the things that we know that we will be looking into as we progress in our subcommittee is particularly for federal agencies we often place a lot of emphasis, and since we are dealing with research and higher education, precollege education, in the recruitment of the people coming into the work force but we find it of utmost importance to also look into how do we establish career, congressional programs when we get to retrain our own existing work force in our agencies, and in

27
order to keep our best and brightest within and not go through
the training that we occasionally see or has become a real
problem when we have federal government agencies competing
with private industry.

DOCTOR CLUTTER: Yes, I have a question. I wonder what
we are using as a definition for scientists and engineers or
people in that profession or those professions. For example,
are we talking about people who are technicians, you know, at
the BS level, are we talking about nurses, you mentioned, or
are we talking about -- are we going to effect this on people
with higher degrees? It's just a matter of focusing on the
issues that we want to address.

MS. FREEMAN: That's exactly the question that I would
like answered. Also that we really need to prioritize, so to
speak, the pertinent series, pertinent job series, what do we
consider to be the pertinent job series that we want.

DOCTOR REYNOLDS: Could I, perhaps, let Sue respond and
there's something I want to say about that.

MS. REMNITZER: I think this is a very good point, and
let me jump ahead and say that we have on board the commission
staff now on a part-time basis, Betty Vetter, who is the
president of the commission on professionals in science and
technology, who is the premiere expert on working on the
statistics, and I would like to ask her to review all this
thoroughly and go to the standard definitions that are used by
NSF and all and DOD, and sort out some -- a path for us through the statistical series that exist.

DOCTOR REYNOLDS: I would like to say, though, that I personally -- I haven't had a chance to confer with my co-chair, but I have a strong bias that we have to in some fashion keep track of all of these categories, because it's just pivotal to track them. In other words, the person with the baccalaureate in biology that becomes a laboratory researcher often goes on, and also the whole scientific manpower effort, the whole research future of the country depends on that infrastructure of trained scientific personnel as well, so I see heads nodding and would hope.

MS. VETTER: I have been looking over the occupational codes that the federal government uses, and it would appear to me that we need separate data, but data on everything within those set occupations, including trainee. There is one called trainee in almost every set. I don't know what it means, but probably most of you federal people do, but it must be an entry-level problem, not degreed job, but I don't know whether it's degreed or nondegreed. I think we need data for all of those, but they have got to be kept straight.

DOCTOR REYNOLDS: Does that help?

MS. WINKLER: I just wanted to add this point. When you are looking at opportunity aid data, which is very important because increasing PELL grants which are targeted towards low
income students, postsecondary education is not necessarily university or college education. It's often professional training or some sort of technical training which is outside the whole university world, and this is a very quickly -- rapidly growing field in which we at least have to consider and look at because the implications for the pool of student aid money and where it is going, that's quite an important issue.

DOCTOR REYNOLDS: You know, you make a very important point there, and one that, you know, may not be completely within the purview of this subcommittee or this Task Force, but I certainly hope we address it to some extent. If I'm not mistaken, over half of all PELL grant money is now going to proprietary schools. I think that's correct.

MS. WINKLER: I don't know the exact figure, but it is a large and growing portion.

DOCTOR REYNOLDS: It is a large and growing figure. Those of us in what I would call -- shall we call us the nonproprietary schools? I mean, those of us in the -- can I be so bold as to say mainstream higher education are deeply concerned about this because a lot of those PELL recipients are in schools of cosmetology and --

MS. WINKLER: We should be getting in the next six to eight months much better data on where a lot of this money is going.
DOCTOR REYNOLDS: But my point is a lot of those schools are -- some of them probably very solid and well conceived, and a lot of them somewhat ersatz with respect to students being prepared for scientific careers. I would hope our Task Force at least could take a brief look at that because it could be helpful to this growing problem of so much PELL grant money going to proprietary schools, and they claim to be producing some of the scientific technicians or lab technicians and so forth, and I think there's a very poor employment history after training.

MS. WINKLER: Our inspector general is deeply concerned, also.

DOCTOR REYNOLDS: We have a big problem there.

MS. WINKLER: Proprietary schools, I'm not sure what the official definition is, but basically it's a postsecondary institution other than a university or college which provides job training of some sort. Some are very sophisticated and some are not so sophisticated.

DOCTOR REYNOLDS: But the proprietary schools --

MS. WINKLER: They are privately owned.

DOCTOR REYNOLDS: They are privately owned and someone makes a profit from them.

MS. WINKLER: Some of them are not for profit as opposed to -- they are not just money-making outfits. It's a huge range.
DOCTOR REYNOLDS: The PTL was not for profit, too.

MR. WILLIAMS: I would like to make a response. That was tempered by Mary, but what I would suggest is in the instance of high education and proprietary college, I would make a cautionary observation that while it is necessary to make these rosters of support mechanisms that exist in various federal agencies, the essential question is, as I view it, with respect to the status of outcomes in those data are in fashion, i.e., I don't think it's terribly interesting and necessary that the following programs exist for research for the effective groups to question, plus the quality of participation by scientists or AGX and the way to manage that. I simply wanted to emphasize that.

MR. FERNANDEZ: In regards to the relationship of the employment definition for science and engineering versus the higher education definition, if we are going to address the total higher education question, which includes two-year institutions, I think one, there's a very definite national trend in pushing off a lot of the minorities and handicapped into two-year institutions through raising the admission standards and other things, tuition, and so I think that's a very key issue that's going to have to be addressed through the higher education subcommittee and again, it can be addressed from the output standpoint and not necessarily by categorization of jobs. Secondly, I think also in regards to
two-year institutions that probably the statistics show that
the supportive jobs for scientists and engineers might run
from one to five or more in every category of science and
technology, so therefore, from an employment standpoint it's a
very important question.

DOCTOR REYNOLDS: Yes. Any other comments?

MS. SABATINI: I would just like to make a comment. I
serve on the board of trustees of an institute of technology
who is proprietary but not for profit, and we are dealing with
this problem of those cosmetician schools getting grants where
we grant associate degrees, and I think in our subcommittee we
address the fact that there's a whole substrata of people with
associate degrees who are not going to college but are getting
a college education, and in essence, and they are not included
traditionally in any of these statistics, so we are going to
address that, too. In fact, I asked the president of this
institute to be a witness at one of these hearings to show
some of the things that are being done at that level.

DOCTOR REYNOLDS: I think that's very important because
we do have at the research level or at the educational level a
tiered infrastructure of people with various levels of
educational attainment, and they are all absolutely pivotal to
the research or educational enterprise, so we do want to look
at that, as well, and I have the notion with hopes of
broadening it, but also dealing with the problem that Ms.
Winkler raises where an enormous number of dollars are probably inappropriately being spent. If they were focused better on the appropriate training for individuals would yield good results for the intents of this committee or this Task Force.

MS. BISHOP: I would just like to ask a process question. The information that Ms. Vetter is going to get for us, I assume, will be sent out to all of the committee, all of the members of the Task Force. That has to do with the scope of defining what it is we are really talking about. Going back to Claire's question as to what really are we talking about in terms of science and technology, so I am going on the assumption that once she has defined -- Ms. Vetter defined what it is we think we are talking about, that that information will then be disseminated to all the members of the Task Force so that all of the subcommittees and members will know exactly what is our scope.

DOCTOR REYNOLDS: Yes.

MS. FREEMAN: In addition to that I would like to request that Ms. Vetter work directly with the defense manpower data center staff, because that would really assist them in setting up their survey methodology such that the outcome would be most useful.

MS. VETTER: The CASET group, you mean?

MS. FREEMAN: To work with our subcommittee, yes, but
more importantly to work directly -- I will put you in touch with the defense -- the defense manpower data center, which is located in Alexandria, Virginia, and the person's name is Rick McGonavile who is doing the work, but we will put you in touch so that we can really get the people who are going to be punching the numbers and setting the survey up to be in sync with what this Task Force is doing.

DOCTOR REYNOLDS: Let me understand this a bit. You are going to arrange for Ms. Vetter's being with them because she is really a very special resource? You will properly prepare them for her level of expertise?

MS. FREEMAN: Exactly.

DOCTOR REYNOLDS: I'm comfortable with them.

MS. FREEMAN: They also have an extreme talent. They are very, very talented in designing and doing surveys of this sort, and so that's why it's critical for you and the staff there to be talking on the same wavelength at this early stage. I think that that would be very, very valuable in the long-term.

DOCTOR REYNOLDS: Do you have a comment on that?

MS. VETTER: No. I think I was only going to add that in relation to what I thought you were saying, I'm already working with the Huston-Tillotson people at CASET to try to get all the data together that they want, so I think there is a close correlation with what they are doing and what you are
doing and ultimately we will see how it all fits together.

MS. FREEMAN: Thank you.

DOCTOR JENKINS: May I make an additional comment? I would request that when each of our subtask force groups finish that we have given some attention to not only looking at the existing situation, the successful numbers and what you might be multiplying, but what is increasing the numbers of minorities of women, handicapped, double, triple, tens of thousand. If you piled up every single one of the programs now successful, it is not enough. It simply is not enough, and the kinds of numbers we are going to need in the year 2000 and beyond will require extraordinary effort. We have a charter -- developed a long-term plan to advance opportunities, so I hope each of our groups give some attention to that. We have to have more research, more people graduating.

DOCTOR REYNOLDS: We are in total accord with you there. That really is the intent of this. There is simply far too much talent in this nation going to waste. Why don't we move ahead then to the next agenda item. The progress report by Ms. Kemnitzer.

MS. KEMNITZER: Thank you very much. The main thing I wanted to do today was to introduce to you the people who are now with the Task Force staff, and to give them some recognition. First off, Mary Ann Orlando, who I see is still
busily working. She is not in the room. She is the one who
has helped in organizing the hearings and in turn, will
continue that role through the course of each of those events.
Betty Vetter, who we have already spoken with today. Betty
for thirty-five years has been the head of the Commission on
Professionals in Science and Technology, and is everybody's
expert, and we are very lucky to have her time for the Task
Force.

Let me ask each of the subcommittees to work with
her in the area of statistical analysis. I ask you to do that
for a couple of reasons. One, so we get the consistency of
definition, which is a point you have already identified, and
secondly, she really is the one person whom I know who knows
the most about these topics. I ask, however, that this is
done not in a manner of asking Betty to do all the work, but
rather using her as a counselor advisor in much the way we
have just worked out with Claire and her staff. I'm sure the
Department of Defense has significant computer capability for
doing analyses, and we should rely on that kind of expertise
in the agencies, but use Betty for general guidance and
insight.

And thirdly, I would like to introduce Debra
Chapley, who is in the black jacket in the front row here.
Debra is a distinguished writer, and she is going to help us
have a distinguished report. Again, Debra is not going to
write every word in the report, but she is going to help us provide consistency and clarity from the products that the subcommittees come up with. Debra has been on the staff of "Science Magazine." She's been the Washington representative for "Nature Magazine." She's written several major books on her own through the Resources for the Future and the Center for Strategic Studies at Georgetown University. She is just about to come out with a book that is a biography on McNamara to be published by Mora, and then she will be helping us with writing our report. So again, here's an excellent resource person who can help us put together our final report in a very compelling way.

I feel very confident about the resources we have available to do our work, and thank all of you for your commitment and time, and assuring that we have a good product. Let me mention one housekeeping matter. Being the executive director I get to mention these lovely topics like lunch money, things like that. If you each could give me a check for thirty dollars that would cover all the refreshments we are having today, because the way this works is I have to pay for them personally and then get reimbursed from you all. It puts a crimp in the family cash flow. You in turn can get reimbursed through your mechanisms for this. I don't mean to say that you are personally paying for it, but I would appreciate it if before you leave today each give me a check.
for thirty dollars, and if you have any questions about any logistical matters or --

MS. FREEMAN: I would request that you let us know this requirement in advance. For example, I don't have any checks on me, and surely we can work something out.

MS. KEMNITZER: It appears that this will be a routine practice at each hearing. That is, we will be bringing in lunch and some breakfast items, and we have no way of paying for those with the government funds that finance the Task Force, so we ask you to pay for them and then get reimbursed through your travel reimbursement mechanism.

MS. WINKLER: Thirty dollars for lunch?

MS. FREEMAN: You understand that most of us who are traveling with the government have a twenty-five dollar typically for meals, so you better eat well at lunch.

MS. KEMNITZER: If you would like to change the practice in any way, I'm happy to entertain that consideration.

MS. FREEMAN: I don't think we need a thirty-dollar fare, a bill-of-fare lunch.

MS. KEMNITZER: Eighty-four dollars in Albuquerque. It changes by city. The hotel is forty-nine dollars, so that made you have the balance for meals.

MS. WALTER: We have twenty-five above our hotel fare.

DOCTOR DANEK: That is if you are staying here. If you are not staying here, it is half, so if you go home today it's
twelve dollars and fifty cents, I think. Is that correct?

MS. REMNITZER: I'm happy to talk about how we pay for lunch, but one option is that we do have to pay, and so we need to work out a mechanism that is fair.

MS. BISHOP: For future reference, though, the money that has already been collected or will be collected from the agencies, I presume that there will be a budget set up from the monies coming in from the agencies. I have no idea what our expenses will be, but I would like to suggest that perhaps food at these hearings might be considered. I don't know.

MS. REMNITZER: The National Science Foundation has sort of a bank, the trustee. It is not possible. Indeed, it is illegal for those federal funds to be used to pay for your lunch.

DOCTOR DANEK: Do you want the check made to you personally?

MS. REMNITZER: Yes.

MS. SABATINI: Will you take cash?

MS. REMNITZER: Sure. I would rather not carry around that amount.

MS. SABATINI: Everybody brings a credit card instead of your checkbook.

MS. REMNITZER: I certainly trust all of you to send me whatever you are able to send me over the next week because I realize I have this problem of short notice.
MS. FREEMAN: So you need to know also that in terms of the logistical processing procedures of the bureaucracies it would be much easier for my finance guy to swallow paying the National Science Foundation back as opposed to the kind of questions that he will hit me with with a thirty-dollar check to you, and I think that --

MS. KEMNITZER: I could get the name of the caterer for you if you would like to make it out to the caterer.

MS. FREEMAN: That's not the point. I think we need a set of process employees that will either associate paying in advance to the National Science Foundation for them to do -- handle the catering, to collect the money in advance, because then we can get our agencies to pay in advance perhaps for these.

DOCTOR REYNOLDS: If I understand Sue right, I think she is saying the NSF does not want to be involved in food purchase for this group at all. That has to come out of people's individual per diem.

DOCTOR JENKINS: Could it be made out to the Task Force? You don't have an account for it?

MS. KEMNITZER: No.

MS. FREEMAN: The difficulty is paying an individual for a meal versus paying an established organization.

DOCTOR REYNOLDS: Of course, if you were having lunch at the airport cafeteria it really amounts to the same thing. I
think they expect you to simply turn in whatever amount.

MS. FREEMAN: The difference is anything is under fifteen dollars, we do not have to turn in a sheet at all. If it's over fifteen dollars, you have to document it. It's very bureaucratic, and I don't want to take up time with the committee.


MS. KEMNITZER: I would be happy to work out whatever arrangement works with your agency. I have learned in working with the twelve agencies in getting the Task Force off the ground that each group has their own rules. NSF won't pay for any food, so I personally have to arrange for the food and pay for it in advance, and let's work out a way where we can essentially cover those expenses, either by making a check out to the caterer or to the person, and if it varies for each member of the Task Force based on their situation, well, that's part of my job to try to make those things go smoothly.

DOCTOR REYNOLDS: Thank you, Sue. Other comments or concerns over the overall work of the Task Force? All right.

DOCTOR ADAMS: Is that all of Sue's report, because there's no date of an upcoming meeting, a December meeting. Could we have that yet?

MS. KEMNITZER: I wanted to tell you or remind you that the next Task Force meeting is October 29th in Chicago, and we will be notifying you precisely of the arrangements there of
hotel and meeting space. I could tell you that we have a tentative commitment, but I want to emphasize it's tentative, that the Science Museum there in Chicago which does superb work with Black science history programs and superb work with the young people in the community may be able to sponsor the hearing. They have another group that we have to shuffle around, so that's not official, but if that can't be worked out then we will have it downtown in the federal building, but we will be in Chicago, the city itself, on October 29th. Same drill as today, seven thirty meeting and hearing for the balance of the day, and again, let me emphasize that if you have people you would like to appear -- Howard Adams one day gave me a whole good list of people that he thought should appear, but I need to have them in writing, Howard. I urge you to send those in because we really do want these to be very substantive and a good learning experience, and in a way a showcase. The programs have been successful.

DOCTOR REYNOLDS: You are talking about the Museum of Science and Technology? It is one down near the zoo? There's no museum near -- are you talking about the one down near the University of Chicago, Museum of Science and Industry? Which museum?

MS. VETTER: Academy of Science.

DOCTOR REYNOLDS: Chicago Academy of Science and Industry. So people know which one.
MS. BISHOP: One other point I would just like to bring to your attention. If it's at all possible, if you know the details of the next future hearings, place, time, et cetera, it would be very helpful if you could recognize the mails in the government agencies and try to get that out well in advance. I happened to be at my office all day yesterday and the afternoon mail brought the copy of what we have today. If I had left earlier, I would have missed it, so I would like to sensitize you to the fact that a lot of mail coming in the government agencies doesn't come directly to my desk. It makes many trips around before it gets to my desk.

MS. FENNITZER: Please advise me if there's a shorthand way we could get things to you, let me know. We are just about to -- you should have gotten in the mail a handbook on the new computer system we are setting up, electronic mail system. Hopefully that will ease some of these problems with the mail delivery. That will be the principal way in which we communicate with people in the future.

DOCTOR REYNOLDS: Thank you. I would like to ask Mr. Fernandez about the status of the National Agenda Committee. Has anything further happened on that issue.

MR. FERNANDEZ: We have not met. I had planned to have a subcommittee meeting next time I was back in Washington, DC, but I have been going out to California instead. However, a couple of things that I hope evolves out of this ad hoc
committee, one is that we do take the long-term look at the projections towards the end of the century across the board for science and technology. I think several people mentioned the fact here that you can't ignore one segment against another, especially in respect to the output of education, and I think the committee has already made a determination that we have to address the whole system of education down to elementary school and probably preschool. So given that, I hope that our outline of discussion in this subcommittee is going to lead into an input-output-type of discussion at every level of educational endeavor, and then at points in time where they tie into employment that we seriously discuss the projected needs through the end of the century, and hopefully come up with key recommendations for the long-term plan, but hopefully I will get back to Washington here in the next month or so and we will have more serious discussion.

Mr. Oaxaca: In that particular vein, if you recall, the reason for that ad hoc committee was to have those folks look at how we get the right kind of horsepower for implementation of what this very important report will come out and say. The tentative view is that we will endeavor, and we sure need input from you folks, to hit the candidates not only for president, but those key folks that are running where you will have -- I guess, the super Tuesday is sometime in March, and it is in my mind very important that we start getting those
candidates that are running for president, et cetera, to think about the importance of the issues that this Task Force is addressing.

And as we start working with that wonderful help we are going to get from this young lady here in front of us on how to do the report, and we start looking at how we might formulate the structure of the report so that it's a very punchy-type report and not a voluminous-type report, and how we get white papers out to the candidates as we progress and how we structure the different editions of this report so that we can use it as a mechanism to highlight before the election, during the primaries, after the election and as a sort of a living document that will culminate in the progress that has occurred when the Task Force closes off in 1990. And so the committees that now have reported and put together such a fine start I think it's of paramount importance that the ad hoc committee on what we will formulate as a national agenda take the initial inputs from those committees and come together, so I will hope, Herb, that you and your folks will have something to report on in the October session. Thank you.

MS. WINKLER: Procedural question. I don't think we ever talked about the order in which reports will be delivered, assembled and turned into a final report. I kind of understood, and just tell me if I'm right. Each subcommittee will prepare it's own written report for the whole Task Force,
and then its findings will be summarized in the interim report and I assume that we will -- that it will be circulated for comment by the committees before publication so that all members can review.

DOCTOR REYNOLDS: That's correct. Then let us continue on. We are doing well on time. I would like to suggest that if anyone has any special concerns or any questions from any of the people testifying today there will be an opportunity to do so. The way we plan to proceed is that each witness will come forward, sit at that table. Each witness will have nine minutes to present. We have a bell-ringing lady appropriately with a kitchen timer, and we believe it's sophisticated technology, and that bell will quietly go off at the end of nine minutes to warn the witness. I will endeavor in a polite way to bring each witness to a close at the end of ten minutes. That will give members of the Task Force a five-minute period to ask questions or to clarify something, perhaps, that the witness has indicated. There is a long list of people who are eager to testify today, and their times are included with the roster. Then we hope, by moving at a brisk pace, to be able to complete this shortly after noontime. Any questions or concerns about the way we are going to move forward this morning?

MR. OAXACA: I want to go on record that the men had nothing to do with picking the woman to run the kitchen timer.
MS. FREEMAN: I have one housekeeping comment. Would it be possible to get some xerox copies made of some material?

MS. KEMNITZER: I think we have to turn to the air force for that. Kirtland Air Force Base has provided some support help for us today of all manner, which we are very thankful for, and between them and the University of New Mexico we will check and find out if we can, yes.

MS. FREEMAN: Thank you.

DOCTOR REMOLDS: Any questions on that? I think it would be useful -- after today's hearing you will have ample time, most of you will have ample time to ponder on the return trip. It lets you all know what those of us in California have to endure on these trips through or regularly to Washington, those happy flights, to ponder the general information, the drift, the content of the testimony today. I'm pleased we have another week to ponder additional witnesses because we want to make sure that we do get a thorough review of the concerns that are there nationwide with respect to future scientific manpower needs, and our special concern of women minorities and the handicap in this group.

So I would urge all of you as you hear the testimony today to think what is not there, what does this group still need to hear about, what are we missing, what else do we want to be exposed to, because we still have ample opportunity to do that in creating the roster of people who
will present an additional hearing. I think that more or less summarizes where we are.

DOCTOR SCADDEN: Procedural question. In reading the materials it is clear that those who testify will also be submitting in writing apparently a more lengthy report. Will we have access to those reports?

DOCTOR REYNOLDS: Yes. Are you planning to circulate them to every member of the Task Force or what are you planning to do with those?

MS. KEMNITZER: If I might ask you to indicate interest to me because I think we are going to have a very large pile and that times fifty Task Force members is quite a job to distribute, so please, if you have interest in any one person's testimony or if you would like to see all of the complete testimony, just let me know and we will be happy to send them to you.

DOCTOR REYNOLDS: Is that agreeable, Doctor Scadden, in order to keep a list of those you would have to have the more detailed written testimony. I think then we are in good shape. We want to start right on the dot at nine thirty. Could I do that? Why don't we all get, which I think will be welcome, a twenty-minute break, but I would like to ask that you be back at your seats by nine twenty. We may have a few additional comments or clarifying matters to go over by nine thirty, to grab a quick cup of coffee and a good roll and we
will see you in twenty minutes. Thanks.

(THEREUPON, the meeting was concluded.)
REPORTER'S CERTIFICATE

I, JANE ANN BAKER, a Certified Shorthand Reporter for the firm of HOWARD W. HENRY & COMPANY, DO HEREBY CERTIFY that I reported the foregoing case in Stenographic Shorthand and transcribed, or had the same transcribed under my supervision and direction; and that the same is a true and correct record of the proceedings had at that time and place.

I FURTHER CERTIFY that I am not employed by any of the parties to this action or attorneys appearing herein, and that I have no financial interest in the outcome of this case.

WITNESS my hand this 23rd day of September, 1987, at my offices in Albuquerque, New Mexico.

[Signature]
Certified Shorthand Reporter
| 1.    | Appearances                                      | 2  |
| 2.    | Opening Statement by Doctor Reynolds             | 2  |
| 3.    | Statement by President May                       | 5  |
| 4.    | Statement by Ms. Freeman                         | 10 |
| 5.    | Statement by Doctor Clive                        | 12 |
| 6.    | Statement by Doctor Scadden                      | 13 |
| 7.    | Statement by Doctor Danek                         | 15 |
| 8.    | Statement by Doctor Adams                        | 19 |
| 9.    | Statement by Doctor Clutter                      | 21 |
| 10.   | Statement by Mr. Thomas                          | 24 |
| 11.   | Statement by Ms. Guerra                          | 24 |
| 12.   | Statement by Ms. Kemnitzer                       | 35 |
| 13.   | Statement by Mr. Fernandez                       | 43 |
| 14.   | Meeting Concluded                                | 48 |
| 15.   | Reporter's Certificate                           | 52 |