

24th Annual AAMI Meeting  
ROUNDTABLE DEBATE  
Tuesday, May 16, 1989 4-5:30 P.M.

National Clinical Engineering Society?

Moderator: Yadin David, Ph.D., P.E.

**(Tape #3. Side #2.)**

Dr. David - Good afternoon, welcome to the 24th Annual AAMI Meeting Roundtable Debates on National Clinical Engineering Society because the material generated enough interest among the group, I would like to make the introduction and introductory remarks very short. Over the last few years, we have seen evolution in the Health Care Delivery industries which accompanied by error of professionalism and science in health. We have seen things changing around us in the way we practice our profession and the question came about, the other day, who represents the Clinical Engineers. Different organizations, societies and groups have risen over the past years and each represent certain missions and goals. And how much parallel that carries; how much does that parallel the interest of the Clinical Engineers. That's what we would like to find out this afternoon. I would like to thank all the people that encouraged me and helped me to bring about this presentation. Many of them are sitting here in the room, and specifically...

**(Tape #3. Side B.)**

**(Tape #2. Side B. (cont'd))**

Dr. David - and specifically I would like to express my appreciation to the panelists for accepting the invitation to come here today. Some of them are specifically here only for the purpose of participation in this round table discussion. Hopefully we're going to learn something about what's the future hope for Clinical Engineers here in the U.S. and perhaps globally as well. With out further adieu I would like to introduce our panelists. And what I have asked the panel to do (and anybody who would see the agenda it's here on the yellow pages). Is to respond to some basic questions. Do we need a Clinical Engineering Society? Who should represent the Clinical Engineer? Should the College of American Clinical Engineers be created? What is done to promote and recognize excellence in Clinical Engineers? What are the obligations this professional group has? What should we do about it? And what is the strategy to reach our future goals? Our panelists represent several societies and group of independents (for a lack of any other term, we use "independent"). IEEE/EMBS is represented by Dr. Joseph Dyro, AAMI by Dr. Tom Bauld, ASHE by Thomas Schipper, SBET invited but is not here, Independent has two representatives: Gerald Goodman and Dr. David Simmons, and that is the order that we will follow. We will start with Joseph Dyro.

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Dr. David - Joseph Dyro, Certified Clinical Engineer, has a doctorate in Engineering, is the Director of the Biomedical Engineering Department and Associate Professor of Anesthesiology at University Hospital and Health Sciences Center at the State University of New York at Stony Brook. He is a graduate of MIT and the University of Pennsylvania. A Biomedical Engineer for 17 years, Dr. Dyro has lectured extensively on Medical Device Safety and Clinical Engineering practices. Through out the first FDA standard on Infant Incubators and Radiant Warmers and was the first to assess the hazards and risk of apnea monitors. He was also the first to describe the environmental hazards of ethylene oxide sterilizers in hospitals. I have requested each of the panelists to limit their comments to five minutes so we can follow up with active participation of the audience. Dr. Dyro, please.

Dr. Dyro - Thank you very much Yadin. I've been a member of the IEEE/EMBS for some 17 years. I've been appointed the Ad Hope Clinical Engineering Committee, as a member of this committee, and that is basically why I'm here today as a member of this Ad Hope Committee. I'm very pleased to say that I was appointed to this committee by a former class mate, a professional colleague, and a fellow state of Mainer, who we are very fortunate to know is in the audience today who is the president of this Engineering and Medicine and Biology Society, Willis Tomkins. Now some of you may have read a recent article editorial in the EMBS news letter where Professor Tomkins described a drink which is known by many people, particularly in the state of Maine, known as Moxy. Many of you know that Moxy also stands for nerve or gumption or really the strength to get up and do something about your convictions and get off your duffs and really put into practice what you believe in. I'd like all of you to know, today, as a fellow Mainer, I to have Moxy. And I'm willing to share this Moxy with all of you here today. What I've seen has been a tremendous amount of Moxy already. I've been very pleased over the last several days that virtually every discussion that I've have with my colleagues here at this meeting has centered on their keen interests in the development of professionalism. And I hope that this Round Table would further promote our goals. I'd like to limit my remarks to several items to describe the IEEE/EMBS Society. First the organization, then the membership, then the What, Why does the IEEE/EMBS have an interest in Clinical Engineering, and What sort of benefits come from membership in the IEEE/EMBS. First, organization, the EMBS Society is a member of the worlds largest professional organization over 300,000 members worldwide. This represents a very significant force. The sudden 7500 member EMBS Society is composed of a 1500 members of students and 75 affiliate members. What is the mission of the EMBS? The mission and reading from the Constitution, is basically for the promotion of scientific, literary, and educational goals. But this also includes the

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maintenance of the high professional standing among its members. And this is the reason that EMBS must be involved in all aspects of our members, the members careers. Membership to the EMBS can be made by providing to an affiliate organization. One can belong to EMBS without belonging to the IEEE. Most people happen to belong to the IEEE and as one of the societies within IEEE, I choose to belong to the EMBS. EMBS appointed an Ad Hope Committee on Clinical Engineering to study the issue of how best the IEEE/EMBS can further the goals of its constituency that happen to be involved in the area of Clinical Engineering. I am one of those people involved in Clinical Engineering, but this is a very real demonstration of how this organization is working for me by forming a committee which will then provide to the Administrative Committee of the EMBS recommendations on how we can be supported in furthering our professional goals. But the Administrative Committee is composed of 20 members; ten are selected from ten sections around the world, six sections in the U.S. and four internationally; there are nine members who are elected from all over; and there is one student member. The number of activities that the EMBS is involved with include the publication of a newsletter which often has clinical engineering related information. EMBS also supports two standards, one of which is familiar to most of you here and that the Medical Information Bus Standard. This is familiar to most Clinical Engineers so in their day to day activity, there's activity going on within EMBS that directly impact upon the Clinical Engineering Profession. One of the major parts of EMBS that I like is the fact that there is an annual international congress which occurs the end of October beginning of November. It's international in scope. In 1992 this will be in Paris. We move this conference from different parts of the United States and are now seeking to satisfy the needs of a number of our international members by going across the ocean. In the interests of keeping the program moving, I'm going to turn it back to Yadin for the next speaker.

Dr. David - Thank you very much Joe. What we will do, we'll try to go through the panelists, then pick up questions from the audience and move along our program. The next speaker is Thomas J. Bauld representing AAMI, the Association for the Advancement of Medical Instrumentation. Tom received his B.S. and E.E. and Ph.D. in Biomedical Engineering from the University of Pennsylvania. He first began working at Sinai Hospital in Detroit 15 years ago, where he started a department. He was one of the founders and the first president of the Michigan Society of Clinical Engineers which continues as an active organization and is one of the co-sponsor organizations of this annual meeting today. He has participated in research on Non-invasive His Bundle Signal Protection and Qualification of Blood Pressure Monitoring System. Among his publications is the AAMI Monogram, Monograph on Planning Executing and Evaluating Inservice Training Programs. And he has been active in AAMI for many years. He co-

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chaired the original meeting in Detroit in 1983. He was a co-chairman of the educational committee of AAMI and a board member for three years. He is presently the Vice President for Engineering Health Care. And he is a co-chairman for this year's annual meeting. And you did do a fine job at this meeting this year Tom.

Thomas Bauld - Thank you Yadin. It's good to see so many of our good friends out here this afternoon. I tried to direct my remarks to the questions that Yadin issued to us in a list of four specific items. One would get some idea of the organizations structure of AAMI and we're directed by an elected board, board chairman, president and president elect, which basically succeed each other and in that order. Then we have vice presidents for administration, industry, BMETs, and for engineering and health care; which is the role I have right now. There is a professional staff lead by the executive director and assistant executive director and department managers for many key departments such as membership in educations, standards and publications. There are a number of committees lead by volunteers, responsible for executing the policy of the directors of the board. Again, membership education, program planning, finance, publications, standards, and now natural standards. The organization has a variety of members. Most of you are aware the three major categories, individual members make up of about 3,000, corporate members about 130, institutions about 220. It's clearly an interdisciplinary group with physicians, clinical engineers, technicians, managers, design engineers, marketing people, academic engineers, and some allied professionals, nurses, and administrators. AAMI serves as a secretary at the International Certification Commission. And administers both the Clinical Engineering and the Biomedical Equipment Technician Certification programs. There is no credentialing of members. All individuals or companies are interested are welcome to participate. As to why the organization is interested in Clinical Engineers is because of their important role of the selection of support and application of medical instrumentation and health care. Clinical Engineers make up a large and active portion of the present membership and represent about 20% of the board of directors currently. As to how does AAMI serve the needs of Clinical Engineers, I think it does so in a variety of fashions. The educational programs to which you are attending today and these past several days is a good example. There are also regional meetings, special focus seminars, and stand alone courses devoted to single topic areas. There is a contribution of a wide range of health care professionals providing many prospectives in health care. There are scientific and technical sessions at the meetings which present the latest developments in addition to courses and extensive exhibits over 120 exhibit vendors are here at this meeting, keeping that entertained in that wide variety of contacts open. In the area of publications,

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you've no doubt seen the recently introduced bimonthly journal Biomedical Instrumentation and Technology, which was basically a consolidation of the former AMI and BTT. And it provides a forum for both peer review, research articles, as well as management articles in many feature departments. Quite an accomplishment there to achieve that in a very short time span. Certainly people are aware of the standards opportunities, the standards activities that AAMI has been a leader in. Establishing performance and functional guidelines for a variety of devices as well as management topics. And the further expansion of that standards activity into the international field is now an active committee within AAMI. There's a substantial amount of recognition provided. There are achievements in Medical Instrumentation, awards for published articles and other contributions, including the Rothin Greatbatch Award, the Eckin Dickinson Award, Spacelabs Management Award for the annual meeting paper, the Clinical Engineering Achievement award, and recently instituted Winchel Homan BMET award. Clinical Engineering Management issues are being actively pursued and addressed by a recently established committee over a year old now, on Clinical Engineering Management with active subcommittees on productivity and cost effectiveness, quality assurance and risk management and data base standardization. As well as the major activity in developing a resource of recent clinical engineering management articles. The administration of the certification processes is one that discusses the qualifications of those professionals desiring and earning this recognition. There are a number of other miscellaneous services but there's also some new activities, some new things that are recently been approved and are proceeding forward in a way of AAMI services for their members. The board has approved the awarding of two research grants per year; one to be awarded to a BMET, and one to a Clinical Engineer for a research topic development for financial support. There's also a new survey Biomedical Engineering Departments being proposed in fact will be initiated shortly to actually find and discuss the extent and the activities of the Biomedical Departments around the country. There is a substantial number of new things going on and I'll be glad to answer and respond to our questions as soon as Yadin thinks that is appropriate.

Dr. David - Thank you very much. Our next panelist, I believe, Thomas Schipper, representing the American Society for Hospital Engineers (ASHE). Thomas Schipper is a Certified Clinical Engineer as well as fellow of the American Society of Hospital Engineering. He is a member of ASHE board for Clinical Engineering and very active participant in the creation of the new Joint Commission for Accreditation of Health Care Organization. He is a member of the JCAHO committee on Hospital Safety. He is presently a candidate for president elect of ASHE and will give us the description of ASHE interest in Clinical

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Engineering.

Thomas Schipper - Thank you Yadin. American Society for Hospital Engineering is a subgroup of the American Hospital Association. The American Hospital Association is developed in with memberships in two ways; one is the institutional memberships, which our hospitals belong to, the other is an individual membership which comes under what they call the personal membership groups. There are 16 of those groups and ASHE is one of them. The Clinical Engineering section of ASHE is a subgroup of ASHE at this point in time. Currently it has, and there was an error that we discovered later on, that has between 700 and 800 members. Primarily these members are Clinical Engineering managers and Biomedical Equipment Technician managers. Primarily Clinical Engineering personnel. The focus of this group is only one. It's to give the best that we can to those who are working in the hospital setting the best that we can to help them grow professionally. The best that we can to help them survive in this cost conscience environment of today. We promote this professional development through our educational programs and through our professional advancement programs and again just a note that we call it the Clinical Engineering section it's quite broad, as far as who we include. We're looking at both Biomedical Equipment Technicians and that are interested especially in becoming managers and Clinical Engineers that have the responsibilities. The Clinical Engineering section is governed by a committee, of technicians and engineers currently there are seven committee members; four of which are clinical engineers, three of which are Biomedical Equipment Technicians. The committee is chaired by the person who has a position on the board, a Clinical Engineer or a Biomedical Equipment Technician depending on who is elected to the post. The board representative has a two year term and may be reelected for two years after which they have to be - give up the post for at least one term. I'm rather unique in that I ended up with a three year term for the first time along for a rather convoluted of reasons, but this is my fifth year. Our educational program, we have a variety of things that we try to get out and first of all in the area of publications we have our Biomedical or Clinical Engineering section newsletter which is bi-monthly. It will go to monthly as soon as we get enough people writing for us that we can do so. We will continue with bi-monthly for a while and if any of you haven't seen this and are interested, just write it on the back of a - newsletter on the back of a card and I'll make sure that you get a copy. We have other publications that are quite extensively used in the field. The most sought after publication in ASHE is the Maintenance Management for Medical Equipment book that we've put out. It's quite up to date, it even discusses maintenance management for medical equipment in terms of risk management which is the focus of the new Joint Commission standards for this year. The other major publication

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that has just been released is a BMET orientation manual. It says volume one for a good reason. We had so much material, we couldn't contain it in one book, so there will be a volume two that will be released by the end of this year from the way it looks at this point. But the first volume is out, if you're interested in the promotional brochure, I've got those with me here. Technical documents have always been a strong point of our organization. Things that we have published in the past, more coming, include such topics as Clinical Engineering Effectiveness from a Hospital Administrator's Perspective; Aids in the Clinical Engineering Professional; Clinical Engineering and Personal Maintenance; Medical Equipment Maintenance Performance Measures; and Using Medical Device Standards in Hospitals as well as the very popular Electrical Standards compendium. We also have an affiliation with the American Hospital Association Technology Series, this is where we go into emerging technologies and principles that are necessary to know how to manage these emerging technologies, some of the publications: Lithotriptors, Implementing Laser Technology, Developing Effective Invasive Cardiology Strategies and Services; and Trends in Nuclear Medicine which are names of just a few. There are also the technology abstracts that have come out and the hazard alerts which have been transferred now to another entity but are still available in the same format that AHA has been using. As far as programs, we have a variety of topical seminars, which include the seminars on the equipment maintenance manual and the BMET orientation programs. We have our annual meeting which allows for cross-training with Hospital Engineering, plant subjects, environmental maintenance, environmental topics such as Aids, Ethylene Oxide, that are of interest to both and then we have our annual symposium which are three tracts of programs or three topics, one full track on management subjects, one on applied technology - concept being how do you manage a certain kind of equipment lasers, for example, is a hot topic no matter where you go. Whether we want to get into the management of it or just learn a little more bit about it, we try to focus on concepts that you need to determine whether or not you want to develop a management program for it on your own. And emerging technology again is a topic in these sessions. In the area of professional recognition, we support two concepts; one which is evidence of individual recognition, individual achievement. We are now offering the ICC exams at all of our meetings. And secondly, a recognition which recognizes contributions to the profession. And that is our, what we call levels of membership programs, where you become a senior or - and a fellow after showing, usually it's years of service which includes contributions not only in moving the profession forward, sharing committees or acting on committees, but also in publications as well. Some of these things that we're looking at at this point in time is a new publication on lasers and there were very substantial publications coming out on that particular subject, and infusion

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devices, how to make nurses understand what the technology is really doing for them. What we see in the future is, we'll see a continual evolution ASHE has provided the opportunity for Clinical Engineering section to continue to evolve and we are gaining more and more strength as we go along. We expect that to see that to continue. Thank you.

Dr. David - Thank you very much Tom. I've asked our next panelist Gerald R. Goodman to participate mainly because of his massive dissertation topic on the Evolution of a Professional Society. Gerald Goodman received his Master degree in Electrical Engineering from the Southern Methodist University in 1970 and received his Masters degree in Hospital Administration from Texas Women's University in 1982. He was manager of Biomedical Instrumentation Department at University of Texas Health Science Center, the Counsel Research Institute, M.D. Anderson Hospital. And has been also a consultant to a national hospital consulting firm specializing in medical equipment planning. Presently Mr. Goodman is a practicing Clinical Engineer for the last 16 years. Received his c.c.E. certification in 1974, and he is the Associate Director of the Biomedical Engineering Department at Texas Children's Hospital. It's a pleasure for me to introduce Gerald.

Gerald Goodman - Thank you Yadin, I am listed as an independent and number 1 if you'll notice, I am at Texas Children's Hospital in Houston and so is Yadin, so how does that make me independent, and I have been in the field for 16 years and until February of this year at the U.t. M.D. Anderson Hospital...

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**(Tape #3. Side #2.)**

Gerald Goodman- ...until February of this year I managed my own Biomedical Engineering conscience and Yadin and I have a couple of common things that we're interested in #1, we think that the Department at Texas Children's is the best that there is in the country and it's our interest to make it better and to stay at point. Then we have a shared interest in professional societies. As to how we accomplish professional society, there we really have not set a common agenda.

**(Tape #3. Side #2)**

**(Tape #2 Side A.)**

Gerald Goodman - As Yadin mentioned, I published a paper in the Journal of Clinical Engineering in January having to do with what the sociology literature basically says about professions and professional societies and I consider that to be my satisfaction, my commitment to my creator that I do something for the profession and basically I started that paper in 1979 when I attended a meeting at AAMI and we discussed professional societies and requirements for Clinical Engineering for Practice

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and my interest was what did the literature say was important to professions and professional societies. And I won't go into that because you can read the paper and decide whether you agree or not. But basically, it's my opinion that we have three very fine groups that work with clinical engineers and I believe that those groups are technical societies for sure because they provide us with a wealth of very valuable information in a way of their publications as well as information exchange in meetings such as this. However, it's my opinion that they don't meet the test of a professional society. And I think that Clinical Engineers in general suffer from the faults and the failures as a profession of engineers as a whole and I'll use the engineering registration process as an example. At least one part of literature characterizes our registration as simply protecting a title. And what we're protecting is the title of engineer by saying that you can't use the title unless your registered but it does not determine competence because obviously we have confident engineers practicing with and with out P.E.'s. And I think what Clinical Engineering is suffering from, to some degree, all engineers suffer from. I believe we're a collection of individuals and we practice a common occupation. Again our professional societies provide us with good information, but I don't know that they truly meet the complete test of being a professional society at this point. If they were professional societies, and a lot of them have been around long enough to address some of the problems, I don't think we'd have the diversity of educational programs that we have right now. I don't think they would produce people with such a variety of degrees, all of whom are practicing in the same field. We have P.E.'s and C.C.E.'s and Ph.D.'s and M.S. and M.A.G.'s and we're all doing the same thing and calling ourselves Clinical Engineers. And a professional society needs to deal with that issue and should have dealt with it a long time ago. We had meetings yesterday on Certification. We had a separate meeting on Ethics, a meeting today about Professional Society, and in my opinion that's even worse than putting the cart before the horse. In my opinion, we're loading up the cart and you haven't even given any thought as to how you're going to move the damn thing. That's basically what you've accomplished by talking about professional issues that revolve around professional societies, when you haven't locked down the society. I think that most of our employers know about Clinical Engineering from the personal contacts with us as Clinical Engineers, and that's their perception; good, bad, or indifferent. I think that our pursuit of a multiplicity of professional societies has diluted our resources to a great degree and I also think it has elevated professional societies to a point where they're more important than the profession itself. And lastly I think that we're much too timid to insist that a professional society conform to our wishes as engineers and that it do what we want it to do about engineering. So it's not to say anything negative about all those folks who work with the

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professional societies, and here I am the independent who takes the time to have a practice an active occupation and put in the time it takes to be involved in professional societies is a lot more than many of us are willing to do. So it's not a negative there, it's that some how or another I think it needs to be pulled together and I think it needs to address the issues that are yet to be addressed by Clinical Engineering that has to do with its professional development. So I'll stop at that point.

Dr. David - Thank you very much Gerald. Our next independent panelist Dr. David Simmons. He is president of Health Care Engineering which was founded in '77 to provide consultation, education program, and technical and management solutions to the Health Care community. Dr. Simmons is a Registered Professional Engineer, Certified Clinical Engineer, and also Certified Quality Engineer. He has a degree in Electronic Engineering, Industrial Technology, and his doctorate in the Science of Engineering Management. He founded two service companies in Atlantic Clinical Engineering Services and Technical Dynamics Incorporated, as well as serving as Director of Clinical Engineering at the Fairfax Hospital System in Virginia. Dr. Simmons was the first Chief Biomedical Engineering Branch with the England Health Service of the U.S. Public Health Service and the first Chief Biomedical Engineering for the VA System, Washington D.C. He served on the faculty of Mount Eastern University in Boston and George - G.W. University in Washington D.C. He has presented several technical and management seminars in Clinical Engineering, Medical Improvement Planning, Risk Management, and Quality Control. He is also a co-author of manuals and editor of Clinical Engineering Information Services. He was elected fellow of the American Association for the Advancement of Science in '69. Served as Director for the American Society for Quality Control and Founded there the Biomedical Division. In '81 he was elected a fellow of the American Society of Hospital Engineering, ASHE of the American Hospital Association, where he served as the first chairman of the Clinical Engineering windpool. Dr. Simmons...

Dr. Simmons - Thank you Yadin. You'll note that I'm listed as an Independent panelist. I'm going to be independent at this particular time because I'm not currently in any official capacity with any of the several membership societies. This does not prevent me; however, from having very strong biases. And I have a very strong bias because I love this field, and because of what it and we can do together with other health care professionals to improve the human condition. 24 years I joined AAMI as a charter member for \$10 and attended the 1st annual meeting in Boston. I have been active ever since at virtually all of the organizations' annual meetings and was also involved heavily in the certification development process in the early 1970's with Dr. Caesar Caserus and others. I was even present at

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the birth of the name Clinical Engineering. First mentioned by Dr. Caesar Caserus at one early engineering foundation meeting at George Washington University. Now Torn Bald is the AAMI Vice President for Clinical Engineering and Health Care. There's a BMET Society and an International Certification Commission. 18 years ago I joined ASHE in 1975 in Nashville, I was one of four people elected to serve on a Clinical Engineering steering Committee. I subsequently was appointed to the board of ASHE and served for several years and moved through that activity and in various committees and tasks. We now attend sessions on Ethics, Quality Control, Productivity, we consider international activities, but something is still missing. I don't know yet, whether another society is appropriate or necessary. It very well may be. I do know that the existing organizations and individuals members of these organizations have given much to make the profession what it is today. I do know that ASHE and AHA are not members of the International Certification Commission. I do know that ASHE has taken the position opposing credentialing. I do know that AAMI in its literature used for marketing purposes, and in its booth downstairs, lists Clinical Engineering Certification (C.C.E.) as a benefit and service of AAMI. There are possible questions. What is the remaining linkage for them. You know that it is a secretariat, nobody has ever had a problem with that. But the marketing is of concern. I do know that each organization has its separate agendas. I ask you to read the purpose or mission statement of each organization listing similarities and differences. It's hard to see how any of these organizations can ultimately pull together and form one organization. Those are the facts thus far. I have one opinion. I strongly feel that the International Certification Commission should limit its activities to certification and not become involved in second class society type activities no matter how well intentioned. Why is there still discussion for the need for a new society, Clinical Engineers after two decades. Very simply stated, because there is something missing - mainly a clearly defined professional identity and full professional recognition. Yesterday, Torn Judd, as he discussed development of international activities of the international certification commission said, "We are being bold, thus making ourselves vulnerable." Several years ago in a New Orleans AAMI meeting several of us were bold, put ourselves on the line for pro-to-text after much rancker and argurmenting for years the ultimate result was SBET. So here I go again. I, for one, am tired of recycling this new society issue every year at various annual meetings. It is time to fish or cut bait. Either bite the bullet and create a new society using existing and world wide resources or stop pursuing the fantasy and accept what we have. I am proposing the creation of a representative group to consider the creation of an International Clinical Engineering Society. I hope that in a reasonable period of time that either one of the two above decisions will be reached. Hopefully by the 25th Anniversary of AAMI. You have

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before you a discussion model which I submit to you only to get something on paper. To get the process started, or if appropriate, throw up our hands criticize and attack it and walk away and come back next year and talk about it all over again. I'd like to walk very quickly very through the paper, what I'm proposing and I'll for the sake of time explain the process. It's a two sided sheet that you have. What I'm proposing is that Dr. David contact the appropriate societies as listed on the first sheet. There is an omission, the BMES Board of Directors would be in that list. And that the consideration be given to the creation of an international society. I would submit, for consideration, the structure and governance that you see here that this board would consider the activities listed on the second page, the ten items there. It's a full page. That in order to prevent total control, that rotating board chairmanship with limited terms be instituted, that the position of president or society director be established. Financially, money is the mother's love of any organization. With the potential for an international organization, in parallel, with the International Certification Commission, to perform society type functions, the best of all worlds could be achieved. In terms of dues, world wide membership can be nominal for those individuals that are currently dues paying members at other organizations, or they could be substantially higher for individuals who do not presently belong to an organization. Corporate membership, my mind is boggled by the potential of revenue for corporate memberships coming in from corporations all over the world; Japan, Germany, Great Britain. So the question is always asked, how are we going to fund this? There is a funding mechanism there. Services provided: many of the., many of my colleagues here on the diast of mentioned their various activities and I would very simply state, for the sake of brevity that many of these activities already exist. Every organization has annual meetings, AAMI and AHA have a journal, most of the societies have news letters. AAMI puts out news releases and so forth. I'll leave you to read this. But going to the top of the second page, what doesn't exist is basically personal membership insurance, but more specifically professional representation, loving, and reciprocal society board representation and a strong, strong code of ethics. This proposal is intended to promote the identity, growth, and recognition of the Profession of Clinical Engineering. It is designed to enhance the membership of the existing organizations. It is not designed to negatively impact your membership or finances. Thank you.

Dr. David - David, thank you very much. For the purpose of having a proposal, I have agreed to have my name used on this option which is in front of you. I would like at this point to open discussion with the audience and I have a previous request from Dr. Joe Bronzino to address the panel with some comments.

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Dr. Bronzino - Thank you very much. I think it is a very stimulating opportunity for the entire group of Clinical Engineers that have been assembled. I think that we've had a number of opportunities to listen to the various attributes, the various societies and we're given an opportunity to explore a very novel whole idea. You've been given a control room to officially cut cake, providing that there is a more rational compromise at this particular point in time because I think that Clinical Engineering is in a very transitional point in its evolution. As we stated yesterday in the panel session dealing with ethics, a profession is defined as an aggregate of individuals who have a similar set of technical skills. That and who have received a similar kind of training. That means to some degree that we have to identify exactly what service we provide, and what educational programs should we identify to provide that service. Professionals that are individuals who have demonstrated satisfactory performance of this expertise by passing minimum standard type exams, and are expected to use this skill to provide service to the public in accordance with a code of ethics. A profession requires a number of different things. It requires identification with services we provide, educational systems that provide an opportunity of being trained in that particular area, an examination process, certification process, licensure, that accepts and identifies individuals who have that continual education and skill, and a code of ethics, and to some degree it proceeds in that order. And now what I propose to you is the following: is that we need to address that issue. That is, we need to assemble a task force during the next year to identify: What are the services that Clinical Engineers provide? Should individuals, who do not have a B.S. degree, be entitled to the term Clinical Engineer? Should certification be once in a life time or issued for a duration of five years? All of those things need to be addressed before you can think about grasping the stamp of a professional society. So what my recommendation is, for you to consider, is for you to empower a task force to go and ask these questions and come back with a long range plan. And if the long range plan eventually leads to a professional society, then so be it. But I think there are a lot of things that have got to be addressed in order for us to come from the past and to move ahead.

Dr. David - Thank you.

I have a question, being as pragmatic as I am. I'd like to know how many of us belong to two or more of the organizations, and what is missing in our lives that again we do evade this question. I don't know, every year for the last five, six, ten years. I'm concerned that if the basis of a new organization is to deal with some concepts of professionalism. You'll spend a lot of effort with an organization that will fail. Because it will have no substance. But I'd like to know what we're

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affiliated with.

Dr. David- Let's address.., you posed two questions. One is how many here belong to two or more organizations that are mentioned so far?

That's the opposite question, Yadin.

Dr. David - From the show of hands of this audience, that's obviously very close to 100%. The second question was what do we miss?

...That's what we need to identify. I think you're absolutely right, David.

... My opinion is right now, I'm not missing much, with the three frankly. They seem to address three different needs that I can identify at this point in my professional...for my professional existence. I'm not concerned about title, the word professional or not. I don't feel the need for that identity at this point, and I'm not sure, given the way Clinical Engineering has developed and where we all have come from, and have developed, that it's really a very feasible project at this time either.

Larry F. - It helped a lot of us individually by belonging to three separate societies because as it is their fulfilling three separate needs. But collectively for the professional it seems to have a very fragment toy kind of effect. And all you have to do is to ask for all of us. All of us of the problems we continue to have with our administrators and medical staff and the same old stuff and, I don't know... It's been hesitating...

Dr. David - Stew Abrams.

That's clear from two months ago.-----:---:---:---= ---:---:---  
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What I've seen over the last twenty years of the evolution of the professional organization, a very fine organization, uh, those who remember can remember back that far and I'm just kind of being personal here, we had the IEEE which many of us in academia would participate in because of its - it meets such emphasis, and new problems may surface. If any development & research and evolved into a group that represents a number of individuals and many of us probably would agree that AAMI has distinctive focus more heavily recently than, in my personal opinion, very heavy industrial emphasis. While many papers presented by industry and scientific sessions which they may be. ASHE has admitted as in saying look at the heavy emphasis on the hospital, let's get on the hospital side of the business. So you have different interest groups here representing what was - used to be defined as "Biomedical Engineering", now a new term, which is not new, which is "Clinical Engineering". What is Clinical Engineering

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has become the Vogue, in my opinion, is defined as some new professional entity. The reality of it to me is that we have three very good organizations here that have the ability to define a term member, participants, what this definition really means. The term professionalism has come up. I've heard that. People are out to test peer review the thing that some of us have a problem is the fact that we are a member of this group or that group that doesn't represent enough of a professional image to us, so that group, you have to be fairly viewed by and afterward you don't. The bottom line is that all three groups are complaining. Well that was the opposite of the help you're developing. Makes no sense to me to divide it further, split up that pie even smaller and dilute the essence of what these organizations really is about. It tends, for me it makes sense not combined into one organization and I don't think that's what it's for. But to, as this gentleman suggested, I think that half of the membership of these organizations strongly request some interactive communication included in these organizations to look at this question from a society point of view not from the point of view of creating another one. The worst solution to any problem, in my opinion is, you don't have any answer to create something new to deal with it, but that's just duplication. cause I'm an engineer and I think that way. But, I'd like to see a little sensibility to what the definition of Clinical Engineering was, I remember going to graduate school and someone telling me, you become a Biomedical Engineer and that'll do it for you for the rest of your career. Well, about 20 years later, I consider myself having done that pretty well and now I'm being told, for reasons I hear, well, I need Clinical Engineering. Well, what is that, tell me what that animal is, and I'll help you define what your supposed to do with it. But, the worse thing to me is to try to reinvent the wheel and make it an organization. Let's get these three organizations working together with our help and define it there, and I think one of the problems is, and I'll close, is: If you have this competition between the organizations and, yes in AAMI, whether it be engineering or medicine or the membership dollar and I think there's a lot of ways you can optimize your input of revenue in membership dollars when the member audiences would see more benefits in those organizations. I think we'd have no trouble with membership. Again, it really is that I'm relying this year, that there's, that these organizations are seeing thinning membership due to participants going this way or that way, so food for thought. But I'm opposed, philosophically, to begin another organization. I don't have not enough money to be members of those roles.

Dr. David - Let's address the definition issue here.

Mr. Goodman - Well I just wanted to respond the one part of the second question - why everybody's happy. Why nobody's asked

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about the profession and not, you know, if you consider engineering as a profession; and you consider engineering to require some unique knowledge and unique practice; and then engineering to have an opinion as an engineer, then when somebody challenges that opinion professionally, who speaks for you. We are in hospitals because apparently there's been a strong enough concern over liability or other issues. The same with Clinical Engineers there. Most manufacturers, when they come calling on a hospital now realize that they're going to have talk to some form of Clinical Engineer and that they're going to have base their strategy on politicking the physicians a little bit differently because low and behold there's a Clinical Engineer there who's going to raise a red flag someplace along the line during the sales pitch. But, you know, why haven't the.., if you consider yourself a professional, considering engineering a profession, then to my mind somebody could speak to professional issues when those things are challenged. Somebody used the example of Mortin Thiakol, where that engineer who had a professional opinion, and basically he cooked, by himself, I don't know that there's any professional outcry from engineering over issues such as that. But we don't have a place to focus professional issues as regards to Clinical Engineering. Who's going to speak when our profession is trashed one day.

... Who spoke for the Mortin Thiakol guy. How do you expect anybody to speak for you to support a position like that, I don't understand where an association can speak for a particular individual in that regard. I don't understand that.

Dr. David - yes.

... I would like to agree with sentiments spoken back here. Concerned about the overhead of a new organization and when you mentioned about speaking for the profession or for the individual - speak to whom. And I think we have three very good organizations here that have in roads that speak for our members through to industry, through to the hospital association, through to academia and that in itself is the major benefit.

Dr. David - Ok, yes.

I, in some of the things that I'm hearing, a lot of people are saying, quite a few of these issues really are being taken care of but we seem to have one or two items on our agenda being dealt inevitably taken care of by the various groups available to us. And I also agree with Yadin, you really have to define what we're about and we need and then see what's the best mechanism in fulfilling those areas where we feel there is something that's not being met. Maybe that is a society or maybe it is some better way of working in the existing associations

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that we have. I tend to agree that we need to define exactly where we are. I've been in this field for a long time and I feel that memberships that I have represent various interests that I have as well. I do feel that there is a need for some stronger recognition in Clinical Engineering as a profession but I wonder if that one issue is enough to create an entire new society, maybe it is. But maybe we also need to look at the routes that we have available to us now and see if they're not able to fill that need.

Dr. David - Tom.

Tom B - One of the, that's ok Yadin, one of my questions would be, is there any one organization that can possibly meet all of the things that we see going on in Clinical Engineering now. We have people involved doing research, people whose job is management, people who are involved in equipment development, and people involved in education. Is there one common thread that runs through all that that allows one to look at any one organization out there that's going to handle all those things, and whose going to be the members of such an organization.

Could I make a comment.

Sure.

Tom, I want to make sure that you won't forget about manufacturers. And a couple manufacturers that I feel like I'm being a Clinical Engineer and we're for manufacturers. I feel that society needs to address issue of what role a manufacturer will play in Clinical Engineering as a society or however you address it. I feel that I'm a practicing Clinical Engineer and that I play a very active role in the profession, and I try to stress that a lot in which of the clinical manufacturers ensure development of the manufacturing

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Dr. David - Thank you, yes.

I'd like to take a crack again on what Clinical Engineering is really all about also I mentioned the development not having as much pull power in my teeth. Someone over here, maybe its confusing using the word recognition and I'd like to pursue this because I think it's a lot more significant to a lot of the Clinical Engineers than they tend to realize. So much happens in a hospital which could claim tomorrow. I look back when I started Biomedical Engineering in '65, in research, a strong academic appeal with recognition available at every turn. Starting a Clinical Engineering program in '75 where I still had a foothold in ...(tape ran out)

**(Tape #2. Side A.)**

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**(Tape #3. Side #1.)**

...in '75 where I still had a foothold in \_\_\_\_\_ beginning to report more directly to, to administration. Small, the \_\_\_\_\_ of Ben Brigam some of you note, kind of the quaint little old hospital because it doesn't have very many beds. Everybody knew everybody, still no college for recognition. Now we're in big regulatory hospitals 8700 bed + and a lot of that has been more and more MBAs impression on \_\_\_\_\_ and never been in a hospital before except from the time they were born there. Don't know what goes on in the hospital. And all of this snake artists, earn our bread and butter from the hospital Clinical Engineering luncheon, recording and responding to people finally it comes to; driven into my conscience over the last couple of years with all those people really are holding their purse strings. They've got to know what to do with it. strong marking that we use and it is tomorrow. And I write the paper today, you can read it for Holley Armour or MIT. Those will be in the hospitals. And that's in the reading of the work. This is a very serious problem. They need to an industrial section. Part of the complex and I'm sure that one division makes a biomedical device doesn't always have the attention without administration. So I think that one of the things that we, as a group, I think we need to do is to figure out how to develop the group and also to see what's the realistic part of the effect.

Very, very hard to function, \_\_\_\_\_ to function the people including the \_\_\_\_\_

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Dr. David - Thank you also for the very nice letter you mailed me.

I see what I'm hearing in this group, I speak for the new comers from all these societies of about five years. And being a problem of definition, I know I've received personally after stemming out first a masters degree in Biomedical and Clinical Engineering. \_\_\_\_\_ an opportunity \_\_\_\_\_ what a clinical engineer was \_\_\_\_\_ what I could do for them. There's no record, ...

**(Tape #3. Side #1.)****(Tape #1. Side 2.)**

... There's no record, I don't think that a high school education in the United States who doesn't have a picture in their mind when you say Doctor, Nurse, Hospital Administrator, Electrical Engineer, ok. If you say Clinical Engineer every one must know what you, and I think the problem is my definition. Now, what I'm hearing is the arguments for this society as being - saying are two fold, one is: because we're having this trouble of definition is because we're an interdisciplinary group and we

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have too many societies already and adding another one in there is going to confuse everybody and we'll never be able to form a resolution definition. The other argument is saying, the problem we're having with definitions is because we don't have any solutions. We are not marketing ourselves in the United States of America and to the world as this is what the Clinical Engineer is. Therefore we need a society that can put the name on the map once and for all, in line with every doctor and every hospital administrator you can say I'm a Clinical Engineer organizer. Those, that's what I'm hearing.

Dr. David - Yes.

Thank you. As you know what there just talking about. speaks this morning, mentioned that there's 45 societies in this field. That's too many. He said that he's losing money because he's got to deal with 45 societies. We don't need another society. We need to merge some of the societies that are obscure in together to form a more reasonable group. I'll agree, nobody knows Clinical Engineering. If that's the problem, using the term that nobody recognizes is just changing the terms. Let's talk about it, you got a big marketing problem you can alter your problem by choosing an intrum. But to create another society; you got AAMI, ASHE, IEEE; each of them have their separate folders. We have a problem with politics. We don't have anybody to go to Washington and argue for us. IEEE has a very set view point. AAMI has a different one, ASHE has to go through the American Hospital Association that creates a totally different problem. We have to work combined, all of these designs into one and stand as the Medical Engineering Society.

Dr. David - Yes.

I think what I'm hearing, and I've heard in a couple of places is that we're looking for answers but we're not necessarily asking the right questions. And that the question seems to be and from the show of hands that started this discussion is not that our needs are not being met as society members. You would probably find in administrators are members in AAMI and ASHE, and the researchers are members in AAMI and IEEE, but rather, so for our use that's being fulfilled. But that the question then becomes where is the definition for all of these groups. There is certainly a commonality. There is commonality in this room. Almost 100% of the people in here voiced that they were members of at least two of the societies and in many cases three of the societies. So there is the commonality there amongst the membership. The mission statements of each are different and no one has ever sat down to see if through the commonality of membership there could be a commonality of definition that would take the ranks of each of

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the memberships in bring it into stride. I think what I just heard and I've heard a couple of other places, it's not to form a new society, but to form some sort of a common bond with a meeting structure or reporting structure of each of the societies where the individual functions that are in the strengths of each of those individual groups could come together and could form the strength of the total membership, which would be a lot bigger and a lot easier on all of us than to form somewhat of another society.

Dr. David - Dr. Simmons.

Dr. Simmons - For the sake of brevity we had to shorten our individual presentations. I would like to clarify just one particular point, that Dr. Bronzino brought up. When I made my presentation, I specifically said that I'm proposing the creation of a representative group to consider the creation of an International Clinical Engineering Society. I previously said, that it could go either way. But that group is a representative group comprised of the people that you see on the front of this. That becomes the task force that Dr. Bronzino is discussing and that group would of its nature because of its diversity of viewpoints come together, or decide to pull apart, either way. But either way we've thrown down the gauntlet and said, let's do something or nothing as the case may be.

Dr. David - Mat B.

Mat B. - The distinction that is important to me here is the difference between a technical organization and professional organization and I'm - rather than going into that in any detail would capitalize that very need, is the difference between a society of, for Clinical Engineering and a society of Clinical Engineers. I'm not interested in another society of Clinical Engineering for Clinical Engineering, I think we have some very good technical organizations represented here. I do feel a need for a group that represents Clinical Engineers. A group that needs to have a definition developed before it establishes itself. One, key characteristic, I think of that group is that it would be representative of Clinical Engineers for example, Dr. Simmons mentioned that this would be a representative group. It's representative of organizations but not of individuals. Of the organizations that are represented up here, only the IEEE has some semblance of democracy from its membership. For example, so it is...

... A new semblance he said.

(general laughter.)

... A society of Clinical Engineers that I would be interested in

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and being part of would be one that had genuine democratic representation from real Clinical Engineers; however, we real Clinical Engineers choose to be higher.

Don't forget the manufacturers.

Dr. David - yes.

One of the concepts that strikes me here is the parallels between the different things. The American Heart Association is sort of like AAMI, that a whole bunch of vendors and a whole bunch of different professions, nurses, physicians, and everything here. Then you get the American College of Cardiology, which has totally different focus, you can't join that group unless you're a Cardiologist. And then they'll bring in the certification, they have a fellowship in the American College of Cardiology. And seeings that there's nobody arguing or limiting one of those two groups, they both have purpose and they both have their meetings one in the fall and one in the spring. And I agree with what people are saying that we needed people with focus that's going to speak through the profession of Clinical Engineering. These other groups are so diversified; IEEE has so many different agendas and AAMI has different focuses from regulatory and other things. But we really need somebody that's going to speak out as the Cardiologist has. When you write down that I'm a member of American College of Cardiology, everybody knows you're not an internist - you're a Cardiologist. If you write down FACC behind the name, they know you're board certified. There's no ifs, ands, or buts. You open up any phone book anywhere in the country - boom. And you know when that society speaks, is speaking for their membership. Not some other organization. So I think maybe we could learn a lot from that parallel.

Dr. David - Thank you, David.

David H. - Thank you. One of the things that drew me into Biomedical Engineering and Clinical Engineering was the fact that you had people in many different worlds. We needed the administrator. We needed the researcher. We needed the industry. We also need a legal side, all the organizations are talking about today. Are we needed for our profession? What we've got to do is get these organizations to work together maybe it's going to require an over all superstructure that says A) ASHE - you handle the administrators, hey AAMI - you got the legislatures of our back, hey IEEE -give us pieces of equipment that a person can work without requiring a Ph.D. and without doing all the task functions when a patient is crashing that you have to hit 87 buttons to get a wench pressure. Let's look at the over all picture. Clinical Engineer is a multi-disciplined, multi-reporting structure. No one organization, I don't think,

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could totally survey this - you ever really have to be members of various organizations. There are some that are more applicable to us than others. But what are we getting for our representation, the components for home. You know, it was what, 6 or 7 years ago when IEEE had the revolt with the membership. The elections that were challenged actually would be more of a process right now and it got a pretty good in the election in the process. I came here yesterday when I suggested that AAMI and the teamsters have one thing in common - membership that can't vote on the directors. (general laughter) Maybe this is what we got to do maybe we've got to want to and say hey, we want to get a vote, who want to maybe have orientation on the floor. Maybe we want to say, hey guys, you know, you've served for 20 years, you've done your duty. We'll see you. There was a book published quite a few years ago, a book by Tomlin called 'Up Your Organization'. It said if a persons had the same job for five years, he maybe totally incompetent or too lazy to look for another one. And maybe we've gotta do, maybe we've got to limit our directorships. So we can get new ideas coming through. In 1969 we had the same thing, I think, Kyle I think you were there, we called it the Rodney Dangerfield syndrome. You know, we get no respect. You know, let's face it guys, you've got a very very tough job and it shows it. We're trying to deal with finance, with insurance companies, with lawyers. We need all the help we can get and if we can get the organizations to work together, whether we need to form another overall group to handle these guys, to get the work together. We need everyone. We're a small groups there'll probably 2,000-3,000 of us in the country. Even if they took include all of the manufacturers and all the hospitals; we're not American College of Cardiology, where there's 15,000-20,000 members alone. We're a small group. We can't divide any more, we've got to consolidate. But then again, bang, let's going guys. I've been involved in Biomedical Instrumentation for 25 years now and I'm old and I'm tired, with a couple years before retirement so. Hey guys, you're young, take off. (general laughter).

Dr. David - Tom B.

Tom B. - A comment on one of the statements that was made to about consolidation and acting in concert and also following up on Dr. Zelmon's point this morning. It's absolutely right that the Bio-Engineering community, as a conglomerate, which is greater than Clinical Engineering must indeed act in some kind of uniform way. And there is a mechanism started up. The NSF has funded a task force consisting of the Alliance for Engineering Medicine and Biology and the United States Counsel on Bio-Mechanics. This represents around 40 individual societies. They're going to meet for the first time in August in Washington. And I'll be representing the AAMI organization at that meeting. And that meeting is intended to start to look at what kind of a

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structure is necessary out there to really consolidate all these needs and all these interests. Put together so that we can get congressional support. We can get better training programs and maintain the research dollars. These are the kind of consolidations that are, you know, if its going to happen, its going to happen by the strength of all the engineers together, not just a small fraction. That's an active thing that's going on. And in terms of the administrators not understanding us, "nobody loves me", I guess it's up to us to make that happen. I mean, I think what we need to do as people involved in the profession is to do a better job of our own participation in things the administrators want to listen to. We need to address them at their meetings. We need to write in their publications. We need to bring our message to them, don't expect them to come and read Journal of Clinical Engineering or B.T.T. That's not going to happen. They're not going to do that. We need to take the message to them. And certainly our organizations can help to foster that by promoting the inter-change and the interaction.

Dr. David - Joe D.

Joe - Tom, I think one of the dangers here is that when the message is taken to let's say a hospital administrator. It may be the incorrect message. The message may be taken by someone who claims to be an engineer but in fact is, let's say a technician who claims to be a Certified Clinical Engineer. That's the danger. Now you can go to your administrator and claim to be an engineer and I know your credentials and I'll believe that, but since you know that basically most administrators are unfamiliar with Clinical Engineering and Biomedical Engineering, it can be misrepresented. There's no way of controlling that in, in our current world. What we're looking for is a professional organization. The other organizations can exist, they're useful, when I want to know what manufacturers are doing, when I want to know what, I can go to AAMI. When I want to know what's going on in the physical plant I can go to the ASHE meetings. When I want to know what's going on in the research, I can go to the EMBS meetings. They serve an interest for me. That's why I belong to all of them. But there is nothing there that really represents the interests of a profession which we can call an engineer and an engineer that works in the clinical environment. Everything else might be very well watered down with people that hang on to this thing called clinical engineering that are really not engineers. Administrators, purchasing agents, there's a whole collection of individuals, managers, technology, we're hearing a lot of definitions. It's diluting the essence of engineering and that's a dangerous thing.

Tom B - I would advance that we have a mechanism for that. We have a certification commission. Who's job it is to certify

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Clinical Engineers. And we have standards, we have examinations and we have small numbers as well. Small numbers of people sitting for those examinations. Now I wonder why is this happening, if we have such an interest in professionalism for clinical engineers why aren't they out there becoming certified.

Dr. David- in the ...

In - the problem is, there's several thousand hospitals in this nation and there's 400 certified Clinical Engineers. That's the problem. Again, you don't solve a definition problem. You can't solve why everyone's frustrated.

Dr. David - yes.

They're arguing to form a new society or not. They're arguing for the same reasons. They don't want to come to confuse the definitions.

Dr. David - go ahead.

I'm Steve Madressic from St. Thomas Medical Center and to amplify what Dr. Dyro and Dr. Bronzino said, and through some private discussions we've had over the past few days, one of the things that is happening in our organization is misrepresentation. In doing some literary research work, I found people with associates degrees and people just claiming as BMETs who are claiming within their organizations to be Clinical Engineers. I've also found people with Ph.D.s who are listed in professional groups as being Biomed Equipment Technicians. This vast spectrum in both directions tends to confuse. I had a fellow who graduated with a two year degree from my clinical program, went to a small hospital in southern Ohio, and was declared the Director of Biomedical Engineering. All he's doing is technician level work, does no budgetary, does no true engineering, strictly a PM function; but he will now come out of that hospital and his last position will say - What did you do? I was the Director of Biomedical Engineering, or I was the Director of Clinical Engineering. The point was made about putting a bachelor's degree as the minimum standard, or accepting a master as a minimum standard; or a bachelor with so many years. I think if the ICC were to get involved or its, one of the formative groups wants to get involved, in this; I think we have to sit down and establish this definition that Denver's talking about. Where we come up and say if you do not have a bachelor's degree and two years of experience, there's no way you can consider yourself competent in the field of engineering. Biomedical Engineering or Clinical Engineering, how are we going to go about it. Equivalency as such, you know, can be taken into effect. Someone, I know for a fact that they trained under a fellow who has two years of college and a million years of

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experience, and he can do with a bread board and a couple of wires what it takes me a week with a pencil to do. Someone like that can do engineering function and that has to be taken into effect as well. But we have to make some sort of root, whether it's for the new society or redefinition from the old societies, or drawing the ICC into this and sitting down with the education committees from all the societies and saying. You do not have this level of education or this level of experience - you are not an engineer. If you do not have these particular qualifications, you are not a Clinical or a Biomedical or a CBET or whatever. But there's got to be something we can do, that we can take two of the administration of a hospital to other professional societies. Dr. Bronzino brought out the other day the legal profession does this. You can't even go through a law school, you have to go to the societies and the society recommends you to a law school. All their certification comes within the society. The other people within the hospital that do this is the ASCP, the Clinical Lab people. You go to their schools, their schools send you to an internship. You do the internship, you get your licensure. Once your out as a licensed ASCP or registered ASCP, you go to the lab and the people from the lab organizations come in and say, now we have you so many CNBs, you have to do so many of this and so many of this, to get this program running. We have to establish that kind of level of definition before we can proceed any farther to put us in the new society or anything else.

Dr. David - yes John.

John - There is an aspect for the new professional in dealing with in left out. And it has to do with independence of action that is that what we consider are the that we should be able to ac and authoritative and I submit to you that very few hospitals are interested in another independent entity in an organization. That's why I don't think the, I don't think ASHE is prepared to represent the interest of the individual for Clinical Engineering. There are other reasons why I don't think that the member of IEEE for a long time since, 1959 through IRA organization, I don't think our main IEEE is ready to be a representative of the practicing Clinical Engineer. I don't think, for the other reasons that AAMI is prepared for this. An organization can not be a professional. A person is a professional. So what I would say that we have to some how or another engulf a mechanism for not just reaping the benefits of being professionals. But being - find some way to establish ourselves as being ready to accept the dangers being a professional. The responsibilities of being a professional and one more thing - you don't declare yourself a professional to become professional. You're a professional because you are professional. Because you behave in a professional way. You can not do what the boss tells you to do regardless of what the

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professional opinion is and be a professional. Being a professional engineer, rocket engineer, who could cause a loss of life so he sits down and shuts up about a dangerous situation that he knows exists. Now do we do... (much laughter)..

Dr. David - yes.

As you were saying before, I'm still hearing representation as opposed to definition. I think if you ask a member of ASHE, what is a Clinical Engineer; you ask a member of AAMI, what is a Clinical Engineer; and you ask a person in the IEEE, what is a Clinical Engineer; you would probably get 95% commonality on the same answer. But each of their charters is different. Each of their scopes is different and each of their approaches is different. And as representatives of the different groups that need that kind of information, that that's wonderful. But as a profession, which says you have to have this standard and not a professional, but a profession as society members in a profession. You need to have that commonality defined. And when you can define that commonality and say no matter what group you belong to, this is the definition and not purely by certification, that comes later. But by just definition, not what they do or what they do or what they are; then you can start to educate people and it's ok to have the representation from different perspectives, which is what each of the three groups seem to do and that's why many of us are members of the different groups. But you still have to, somebody has to commit to putting down that definition and hopefully all three groups, if it's broad enough, can see their scope, their perspective in that definition. And that definition doesn't mean creating a new society. It means creating agreement among the membership many of us who are members of, again, of all of the societies involved.

Joe D. - I think there's a way to handle that in the structure of a set of by-laws concerning of the structure of a professional society of Clinical Engineers a definition of Clinical Engineering, I think that, and it's important to have a definition, I agree with you.

Dr. David - yes.

One thing I keep hearing about in one of the things I keep hearing about in a lot of discussions had to do with the credentialing processes and certification processes. Also one of recognition. I think the recognition of labor is static. You can't do it. You'll get yourself into that role, call yourself a clinical engineering and demand recognition and demand that respect. You got to earn it. You got act like a professional. Now the administrator who sees Certified Clinical Engineer, he's going to ask, now what does that mean? I've got sales engineers,

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sanitary engineers, and I've got every kind of engineer there is, come to see me in my office, what the hell is a Clinical Engineer. And you say, well the requirements are, well you gotta have a have an engineering degree or pretend you're an engineer for 30 years, or whatever. There's still no definition. And the ICC still can't make up their mind on how to do it. We're talking about yet another certified in the biomedical equipment management. This, that, and the other thing and well let's get 35 different ones and really confuse matters. If you're going to call it Certified Clinical Engineer, make it be an Engineer. Period. At least take that part out of it.

Dr. David - Manny.

I agree on that.

Manny - The same street including this raising your head over the - take you all a placard. There's very few things, to bring them and to totally your contribution by and I'm impressed by the sight that everything I've heard today is factual and I think it so mixed in with representatives hurrying at where we are. But if I may be permitted to saying what I'm hearing is most of our technical managing real needs are being met by just an organization. What we're missing the professional definition and market. And perhaps the society that can be called our own so that, all of us belong and all of us to it are engineers. It's remarkable but for such a small group of people, 400 perhaps, 2,000 perhaps, whatever; that these large organizations are interested in us, the manufacturers, administrators, hospital associations. So we have some leverage or recognition out of portion for our numbers. So, ... and.. by the same token in the marketing side, we're only marketing to the people who hired us. Plus that small number of hospitals. What about the rest of the hospitals out there. So we have some needs, one is marketing. Yes we can market to our boss on a basis of how well we do. But we can't market outside. In the long term impact, and maybe our security depends on the wider margin. I don't have the solution to this, but just thinking out loud for the moment, we have several organizations that are interested in our membership. Maybe this society could be funded by in per capita, contributions by the organizations we already belong to. The purpose of that would be develop the definition to provide us, perhaps an organization which does nothing more than make sure we're all avai.. - all aware of what all these organizations are currently doing so we can choose our meetings, we can attend training sessions, courses, professional meetings, society meetings, and so forth. And at the same time that money could be used for marketing purposes either by this society that we elect or to fund the certification commission on our behalf to do marketing or to do whatever. If.., so in effect what we do is have our society which could evolve to be something different as

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the interest of these larger organizations becomes apparent on whether or not their willing to claim this marketing program and whatever else that can be followed through. We'll take advantage of the programs in proportion to the quality and the rarability to meet our needs. So three years from now, ten years from now, there may be five or seven societies that we belong to beside AAMI and ASHE and so forth. Or there might be only one because only one that you're willing provide funding and commitment be forced to meet our professional interest. And in the mean time we have this independent body that people have suggested which is made up only of the members of our profession who can look out for our interests and really require very little funding and reduce the competitive nature for our dollars, but most of us can only go to one meeting a year. And we do that fragmentation. But let's use the, the competetive situation to our advantage and see how much of a genuine interest the different societies have in meeting our needs. And we'll walk with our feet.

Dr. David - Joe.

Joe Bronzino - I've; a couple things I'd like to say, as Chairman of the Health Care Engineering Policy Committee, you get to see and discuss issues regarding the global. They are propel issues. And so we see things from a different perspective. I've also been involved in Biomedical Engineering education for a long period of times. And I think the suggestions that were just made of those devices in terms of the overall feel of Biomedical Engineering that I, as much as I've known Manny for a long time, I want to say that I'm definitely opposed to the consideration of anything along those particular lines because of the following reasons. Biomedical Engineering at this particular time is needs cohesiveness to a large extent we are Clinical Engineers all a part of Biomedical Engineering. I ask you all to consider what educational programs the body of people are going to come from that become Clinical Engineering professionals, how are they to be trained? What is the course kind? I would ask, educational institutions to provide the areas that American Society of Educational with in the Biomedical Engineering division. Even if there's going to be a Clinical Engineering division in that day. This is where, I think to some degree you have to think very carefully about. I also think there's a false expectation here. And a false expectation revived around the fact that you use this term engineer. The comment we made is, for better off or worse, we have to live with the respect and the professional status that that word brings in our society in the formation of a Clinical Engineering study isn't going to change that. The status of engineering as a professional long and medicine is just not there. We have to admit that. And to some degree you got to recognize that by just a creation of another society even though it'll all be Clinical Engineering, is not going to change the perception of the society to engineering. So I think we would do

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far better; if we stayed within our own colleagues and spit out, what it is that Clinical Engineer - I'll repeat myself - Clinical Engineers are to do, the service they are to provide to the society. Identify those educational attributes they must have and work with the individual institutions that are present to make it come off and only if that they are totally uncooperative; and only if you can not work with them is it necessary to go and create something new at this particular point in time.

Dr. David - I would like to start thinking about closing this session so I would like to shorten the remarks and let Thomas respond to some of the comments.

Thomas S. - One of the things that's real interesting I think in our discussions, we've all been asking what is the definition of a Clinical Engineer. A couple of comments, to soft spoken, there, two comments in relationship to the definition. One, and it's been alluded to earlier, I don't hear a lot of people screaming that the test for Clinical Engineering is unfair by accepting that exam in some ways we have defined the body of knowledge and what Clinical Engineering is at least from a perspective. The second comment is do we really want to nail down a definition. This is a dynamic world that we live in and if we get too close to something that is solid, what do we end up with. I mean, there used to be somebody on a train called a fireman, that was a solid definition, where is he today? How about a watchmaker, where is he going? So I think that we need to recognize that there is a dynamic element in all of this that although we can have a basic body of knowledge, which I think we do have a body, then the exam; that says, if you are going to be known as certified in Clinical Engineering you must be able to have these fundamentals, in order; beyond that, do you really want to be too rigid in what you do.

Dr. David - George.

George - I am not sure that is actually the problem, I think in that back in the mid '60s, that the reason this group is here is because there is a bit of a bit of a disenchantment with support of the existing societies and we've talked about this in many meetings through the last few years. Is IEEE supporting this, is ASHE supporting it, there's been an increase in that support, I think, because of the amount of discussion. I think back to the mid '60s, the Bio-engineering society has spun out of the EMBS which I think then was the approved form of engineering medicine and biology. I believe that AAMI, to a great extent, came into being because of the lack of support or lack of feeling support from IEEE in those days. And I think is overseen....

... no, no...(interspersed comment)

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George - Yea, the activity of the structure has come along here.

Dr. David - Ok, yes.

I hate to apologize, I want to think , first of all I was supposed to be on the session but I showed up late, I looked at the schedule and was an hour off. My name is Terry Clemans. I'm currently the President of the National Society of Biomedical Equipment Technicians. But in addition to being active in this role, but also we have a common interest in several ways. But, I am a Certified BMET, and I'm also a Certified Clinical Engineer. As President of SBET, I would like to say to Clinical Engineers is that there are other mechanisms out there and that can help as far as a whole Biomedical community goes. In SBET we've been trying to work on communication areas and in toward that goal; toward the goal of strengthening relationships between everyone, there's a few of who are trying to make it easier or who are looking for areas to get together that can help towards the people who might have them. Either as establishing a society more aware of our institute. SBET literal is opened up to chapter members. Now if you look at across the country there are many biomedical groups, that have, that you can look at any biomedical group, there's always composed of the Clinical Engineers, the BMETs, Vendors, a wide group of people. We've widened out our by-laws to allow those groups to come into SBET and in fact what they call a SBET forum. It's just that it's a national information exchange and we're trying to get groups to come together and communicate. Now what we're communicating on BMET ideas, you know the groups that are coming into us. Groups are not just driven. We don't just have BMETs, we have Clinical Engineers, again a wide group and the offer is that it's always open to anyone here. If any group, whether it be a Clinical Engineering group or whatever, does what a going SBET in chapter member, it would help in the areas of communications. And if the group, you know, does - more than we're with the Biorned. So there are actually people who Biornedicals. But it's just another way in which an offer is being made that if it would help and if you check the membership SBET is the representation of - we have chapter members growing no matter from what source, they needed a board seat of good representation. But we're trying to represent a broad interest group and I think if there's anyway that this can help with what's going on that at this point in time, as far as aspect goes, I'd like to offer, you know, it's support. Plus as far as local societies that are out there right now, we're trying to get those groups to come together and at least exchange newsletters, we're showing videotapes which are on management topics, we're trying to define two perfectly different issues that overlap both Biorned and Clinical Engineering. But one profession has to help the other and we're a little bit to different involved as far as

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Dr. David - Ok, I believe what we heard today was very educational as far as what the panelists represented regarding their organizations or non-organizations positions; and the comments from the audience, and I believe we have four options that I would just for the purpose of information would like to show it - to see a show of hands, may be a struggle. Dr. Simmons presented a task force; an independent task force with a mission to request the board director membership from different organizations to look into the meeting needs of Clinical Engineers Internationally. I believe that was One. The Second option we have was brought about by Dr. Joe Bronzino: is to empower a task force that would look into a long range planning, identifying/defining what Clinical Engineers need, what their services, education, etc. are and would present that to - that report would be presented to where?

Joe - There are number of different places. One as being currently talked about was the Health Care Industry Policy Committee. The, you are chairman of the Ad Hoc Committee on Clinical Engineering for EMBS. Several of us should report to bodies of AAMI and ASHE and the society parts, all of the components coming up, are competent exceptions already noted published in the Journal of Clinical Engineering that says the memberships going up.

Dr. David - Ok, that was number 2. Number 3, the option was brought by Manny Furst, we see a very similar concept to create a task force to negotiate with the existing organizations, representation of the Clinical Engineer interests and including marketing is that correct, Manny?

Manny - Well, not exactly. Our purpose is today is whatever the task force decides to do because...

Dr. David - It's like an Institute for Clinical Engineering.

Manny - That's correct.

Dr. David - And the Last one is to join SBET as perhaps a sub group or

Terry - Oh, check back, let me clarify that a little bit. What I'm saying with SBET is that there is a section of our organization that allows corporate chapters to join or come together for information. That's what I'm asking if it's of any help at all local chapters, local societies be there, you know, there's a broad nature, are welcome to join and accept like within - right now we have EMBS, we have a Texas society of Health, Women's Society, but there's a lot of topics there ...

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Dr. David - On the local level.

Terry - There's an information exchange and I think it may help.

(other people mumbling on tape at same time as previous speaker.)

Dr. David - Ok, so we have four options. What I would like to ask you, perhaps the best would be if you would vote only for one. Yes.

Symon B.F. - I've listened to all of you're discussions of the pro's and con's, the needs, the feelings that were expressed at this meeting and then you come up with as you say four options. On which we should expressly vote, to that. The moment Allen called for the questioning, and I think in his mind, I think - obviously I can't get into his mind, that he's looking for a different kind of direction for us to vote, the question to vote. As to whether we want to form an independent society and I think that was of the options that I thought, at least that I've heard, in the discussions, some of the earlier discussions, but it's interesting, even if you look at the four options that was enumerated over here; it only seems that one can take the three or probably three of those four options. They're like bid on the fourth one. Three of the four options. And so combine them together as really one option and call it Task Force. Because that's exactly what it's saying. (general agreement) So we're really talking about Task Force which then has many degrees, many responsibilities, or many goals as we still see it. That, to me, seems to be the only one thing that we can vote on. I'm not sure what else you're asking to vote on.

Dr. David - That's perfectly ok. We're not in organizations so any proposal is a fair proposal today. So what, with a similar input what we are looking at is do we need to create a Task Force that would look at definitions and needs of Clinical Engineers.

Call the question. That's it, don't say anymore.

Whatever you want to call it.

Because you have to take an entire session. You have all the ideas that everyone expressed and you can list them in chronological or some order, some reasonable order and that's what the Task Force is there for.

Good idea.

Thank you Singler.

Mr. Goodman- Sorry, now it's back to...

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(general laughter)

Mr. Goodman - If we have the task force, we've got a task force working at IEEE on the subject. If we have a task force, should not the task force include the three organizations that we're talking about as needing some help from our definitions problem. As opposed to a task force from AAMI, which I...

\_\_\_\_\_ of an audition.

Mr. Goodman- I would think it would be a task force from....

Dr. David - a task force of professionals. Of professionals.

This is the task force right here.

Dr. David - Ok.

Let us take what that both groups submitted and vote whether we accept them hopefully committed or not and go at that.

Dr. David - Ok, we better move and do something to finish the evening so,...(general laughter).

We'll be back next year.

Dr. David - So why we don't take a Seymore's proposal which basically I think can - a Task Force to be created to address...

These problems as enumerated at this meeting.

Dr. David - Fine. Did you all -

Why don't you go over it one more...

In an organization, that's one of the problems...

The question of the meeting, however, still has not been addressed, although it seems that the group sitting has come to a decision. The original question, which can not be, which you're question can not be answered until this one is answered is should there be a society or shouldn't there.

Dr. David - Fair, ok. Let's do that first. The round table topic was - Do we need a Clinical Engineering Society - at this time? And I would like a show of hands for yes. All yes.

Or should we have a task force.

Oh, come one now.

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(general murmuring and laughter.)

Dr. David - One at a time. Do we need a Clinical Engineering Society at present? Any body saying no - ok. I think we are all clear about that. Now we go to number 2. Does this group feel...

Yes , yes pretty much, let's count votes again.

Dr. David - I asked for the yes, there was no vote.

One count, there was one count.

I got a yes.

They didn't understand you Yadin.

Dr. David - Ok.

Ask Stew Abrams, the chair has got something.

Dr. David - Stewart.

Stewart - Let me make a parliamentary suggestions here. This group has no power to decide anything, what the vote is to serve relationship in doing right here, is to decide that this is an AAMI meeting my suggestion, might be out of line with the parliamentarian, but now, is that if you use the administrative structure of the three organizations represented here tonight and let their governing bodies appoint the task force and let this meeting be a voice to say we'd like to see that happen here. Not to vote on a task force and who the members are \_\_\_\_\_intensity...

With all due respect, if you go that route, you'll never see it.

Dr. David - It's just...just. Stewart, it's just for information only. We're not empowering...

It's nothing of an explar\_\_\_\_\_that's all...

Dr. David - Yes. Ok.

Take a vote.

Dr. David - Ok. Allen Pacella requested a little bit clearer show of hands regarding the question Clinical Engineering Society - Do we need it? Any body that feels Yes, will you please raise their hands. (Count) 13 people. Opposed (Count) 30 people. Now the second question is, that this group feel that a task force to

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address all of the above issues that were raised is in place. Do we need something like that? All in favor, raise their hands. Opposed. There are about 50 people in the room, 48 for and 2 against.

Maybe 40 - plus abstentions.

There were abstentions, definitely.

Dr. David - Abstentions, Ok - 5 abstentions. Ok the next question is, How do you feel that this task force should be come to - will function, how would you, who is willing to serve on it?

I would think...

I suggestion...

Yes John.

Suggestion, I'm sorry, you already have an Ad Hoc committee of the IEEE, which now you can invite, people from AAMI, and from ASHE to join to deliberate on this issue. There's no reason why individuals in those two societies can not be attended to that committee. And though have the mechanism already set to order, so I don't think you need to go through this body to go and do the mechanism all on how you're going to do this.

Dr. David - Ok. Yes.

I think that one of the things that has come up that was said over on the other side of the room about parliamentary procedure is that you have a representative from each of the organizations at a fairly high level present and that all we can do as a group is recommend to them what we as members of our groups would like to see maybe called for a vote or some sort of consensus brought up within those organizations that we would like to see and anything beyond that at this sort of a forum is not necessarily going to pass anyone.

Dr. David - Ok.

Maybe we could as each just comment on that, Yadin. Because I think that speaking for AAMI as the Engineering Health Vice President, I think that it should not be just part of the IEEE group that's already started. I think it should be independent. And I think that each of the major organizations should select two people to represent them as a task force. Anything more than that is to big and anything less than that is not representative. That's what I would propose.

Dr. David - Ok.

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Yadin, and you should have independent representatives...

Dr. David - And independent.

and independent.

Dr. David- Ok. Is that putting us back to what...

Yadin, that, I think that brings us exactly back to where we started.

Dr. David - Joe.

May I also suggest that whoever is on this task force be a Clinical Engineer.

... What's that?

(general laughter.)

As opposed to a technician.

It's of no value for anyone on this task force to not be a Clinical Engineer. It's absolutely of no value.

... right, agreed.

Dr. David - Can I, Can I see a show of hands for basically using David Simmons combination of membership to the task force. That's about, I think, we talked about two persons representing Clinical Engineer of each of the organizations, plus independent.

David Simmons - I said only one. You want to double that.

Dr. David - Two. Two. All in favor raise their hands. (Count) 34 people. Opposed. (Count) 2 people. Abstained. (Count) 1

... I think these painted picture is a urge that there should be at least two independents. I don't think there's any independents on this...

Yes sir, two independents members at large, last item.

That's right, I'm sorry.

You're forgiven. (giggle)

Yadin...

I think patient to be minimized if we just remember, when we

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leave here, I wanted to do it. Figure out to maybe do this

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(general laughter.)

Yadin, I wanted to (laughter drowned out talk)

Dr. David - Let's just try to conclude the round table.

One last item of business would then be to agree on someone, perhaps someone standing who might the leader (general laughter) of the ... man your still the right type...

... The gentleman behind you.

... Dr. Dyro comment was important that these people should be Clinical Engineers.

... Oh, I agree, but...

... Someone's got to figure out who's funding that, I guess. Will they all be C.C.E.'s?

Will you relinquish the floor a second Yadin.

Dr. David - yes.

The chair, I mean.

Dr. David - yes.

Simmons - To complete this, it looks as if we have a task force potential in place and the reason I've asked Yadin to relinquish the chair for a moment is to submit and ask for a question - or call a question - or move that Yadin be invited to chair or coordinate this activity and move it forward.

... Second.

Simmons - And I would ask for a show of hands in favor of that proposal. How many opposed to that? You win, any way. Abstentions. It carried unanimously, congratulations.

Dr. David - I would sincerely like to thank the panelists. You can imagine what kind of hard time it was for them really to come here and address those issues. I think we achieved a lot in a very short time that we are here and I appreciate your patience and your support thus far. You will hear from me as the task force develops through the publications of the different organizations.

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••• You have one final task and that's to give Joe back his moxy.

(general laughter.)

Dr. David - Thank you very much.

(general mumbling and greeting of speakers and guests.)

**(Tape #1. Side #2.)**

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