

Comprehensive Cancer Care: Integrating Complementary & Alternative Therapies
Mobilizing Mind, Body and Spirit to Treat Cancer

Moderator: Henry Dreher

Presenters: Alastair Cunningham, PhD, CPsych; Mary Lee Esty, PhD; Julia Rowland, PhD;
Elisabeth Targ, MD

Commentator: Jeanne Achterberg, PhD

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Mr. Dreher: Thank you for coming. My name is Henry Dreher. I'm a medical writer, specializing in complementary medicine and mind-body medicine. I will be your moderator.

We have a wonderful panel and commentator. I will be introducing each person as we go. In the area of mind, body and spirit, there are many very important, vexing and controversial questions. We'll be focusing on a lot of them this afternoon. One point we can probably all agree on – cancer patients need to mobilize mind, body and spirit, if only to be able to cope with, transcend, and find meaning in the crisis of cancer. The intrinsic value of interventions that are designed to mobilize mind, body and spirit in the treatment of cancer are beyond repute.

In fact there's one meta-analysis that not a whole lot of people know about. It was published a few years ago in the journal *Health Psychology*. It showed that, across 45 studies, quality of life measures were vastly increased. The effect size was phenomenal. It led the researchers Meyer and Mark to say that there should be not another dime spent on research in the United States to see whether these kinds of interventions improve quality of life for cancer patients. There's no doubt that they do.

That still leaves us with a lot of very important questions. The most obvious one is, what kind of intervention is best designed to mobilize mind, body and spirit? Is it the David Spiegel model of supportive expressive therapy? Is it the cognitive behavioral model? Is it the Herb Benson model of the relaxation response? Is it some combination of all of these things? Should biofeedback be included? Should a spiritual component be included in some explicit way?

What kind of intervention best helps cancer patients to mobilize mind, body and spirit? This is very much an open question. It's open to research, to theoretical understanding, to clinical experience, to help and guide us.

One of the other big questions is one that we're all very curious about. Does mobilizing mind, body and spirit improve not only the quality of life, but the length of life? Does it enhance life extension? Does it help people to survive longer? May it in fact contribute in some cases to an actual cure? This is a huge question, still very controversial. I've written several articles suggesting that the data that we now have from three very good studies – some would say there are a few more than three – suggest that there is life extension.

David Spiegel's work in which metastatic breast cancer patients lived twice as long when they participated in a psychosocial intervention trial over ten years, Fawzy's work at UCLA in which he showed that melanoma patients were three times more likely to be alive after six-year follow-up – I don't think it's definitive, but it's very interesting. I have compared it in some articles to chemotherapy data. I think it's something for us to really explore today.

Finally, I'd like to just say that there are other questions about the side effects of these interventions. Surely peace of mind is a common side effect of these interventions. Better ability to reach out for support is a common side effect. But is guilt sometimes a side effect, if people don't get well when they've participated in a mind-body intervention? Is self-blame a side effect? The question arises frequently, and it's something we should deal with head on.

I'd like to leave with a quote from David Spiegel, who said that the oldest adage of medicine, going back about a century, is that we should make it our business in medicine to cure rarely, relieve suffering often and comfort always. Now we have inverted this whole thing in the modern age. We try to cure always, to relieve suffering if there's time, and to let someone else

do the comforting. What I'm wondering is, can we cure and comfort both? Does this integrative approach give us a chance to do both? That's something that I hope our panel will address.

I'll start by introducing each presenter. We have Julia Rowland, who is a researcher in the Department of Psychiatry at Georgetown University. She has great experience in research in psychosocial aspects of cancer. She's one of the leading lights in the field of psychosocial oncology. Dr. Rowland has published dozens of articles and book chapters and is a consultant for the National Cancer Institute. She currently serves on the board of the American Cancer Society and is co-author of a landmark book in the field of psychosocial oncology known as *The Handbook of Psychooncology*, co-authored with Dr. Jimmie Holland of Memorial Sloan-Kettering. It's my great pleasure to introduce someone who has been a very important force in the field, Dr. Julia Rowland.

Dr. Rowland: Thank you for that lovely introduction and welcome to our panel. Being a native New Yorker, you're going to find that I talk very quickly. I can give a 40-minute talk in about 15 minutes, which is what we're going to have. I'd like to start by going back and giving a little history. It's very important to frame what's been done in the field of psycho-oncology, for us to understand actually some of the interventions that you're going to hear about over these several days.

To many of you the word psycho-oncology – without its hyphen it looks really odd with those double O's, and that's how our handbook has looked. It doesn't look like that any more. The new text coming out now is just going to be called *Psycho-oncology*. It's important to know the definition. The critical feature about the definition is that it's two-sided, it's bi-directional. What is the impact of cancer on the individual, the patient, the family member and those caring

for patients and families with this disease, the psychosocial impact? The reverse of that is, what do we bring as individuals, as a society, an environment, that impact or cause or contribute to the risk of cancer and cancer outcomes, the sort of psychobiological side?

It's very important to recognize that this is a two-way street. Information that we learn about risk for disease has bearing upon what might be done for someone who already has the disease. In the tamoxifen trial, they took the drug tamoxifen and said, "It works in the secondary prevention. Let's move it into primary prevention." This is no different for some of our psychosocial intervention realms. The reason we've had a burgeoning of interest here – I wouldn't be here as little as 30 years ago because the field didn't exist. In the late 1960's the debate was only just beginning about whether we should tell the diagnosis. In early 1961 only 10% of physicians told patients they had cancer. It bears a moment of pause to realize that it is a stunning occurrence – that by 1977 those statistics were reversed, and 90% of physicians were telling patients they had cancer. It led to very different attitudes. One reason is the successes in modern medicine that have led to better detection and better treatments and longer survival.

This is a slide created by Dennis Hammond in 1981, showing the dramatic shift in survival of pediatric and young adult tumors from very poor mortality outcomes in the early part of the century. With the addition in 1950 of surgery and then radiation and then chemotherapy, there was a dramatic shift for such diseases as testicular cancer, Hodgkin's disease, childhood ALL, sarcomas in children and young adults – curing these diseases that earlier were uniformly fatal. This led to an enormous optimism about our ability to treat this disease, our willingness to talk about it. At the same time we had a growing population of survivors coming back and saying, "To what are we being cured? What kinds of consequences are there?" This heightened the need for an awareness of the psychosocial sequelae attached to this disease. Over the last 30

years we've seen an exponential growth, if you look in the literature of research, attending to the psychosocial impact of cancer, originally describing the epidemiology and most recently, a huge growth of research on interventions to try to alter quality of life outcomes, with that question of what can we do for quantity of life?

From the clinical perspective, what I've seen is a very different shift in patterns of individuals coming to see me. They ask, "Did I bring the cancer on myself?" "May I have caused it, or contributed to it?" "Do I have to have the right mindset to be cured of my disease?" "Should I be doing some alternative or complementary therapy?" "When I'm down, does that mean the cancer is growing?" There is a real attunement of patients and families to what they might be doing in the face of cancer.

I'm going to show you two slides back to back. This is data from Shelley Taylor and colleagues that was published in 1981, work that they did with breast cancer survivors back then. They asked them to what did they attribute their breast cancer. Forty-one percent of those women thought it was due to stress, 17% to diet, blow to the breast, carcinogens and hereditary factors were 50%, but the things that might be modulated by an individual took significance. The following slide is our more recent data. We looked at 160 women with node-negative breast cancer asking very similar questions here. What we're seeing is that dietary now has leapt up to 31%, with a greater awareness of what might be there, 27% think it may be due to stress. Even if we don't have solid data that these are necessarily causative of cancer, certainly many individuals feel it may play a role in their survival and outcome. It behooves us to find out what the data show. Are psychosocial variables factors in cancer risk or survival?

We're going to really run through this, because we've heard some of this earlier today. We'll look at five bodies of research – lifestyles and behavior, social environment, personality

and coping, research on affective states and life events, and then psychosocial and behavioral interventions. These are summary slides, looking at whether these factors contribute to risk of cancer and survival or mortality from cancer. All of us in this room are very aware of much of the literature here. Certainly tobacco is a risk factor in both causing the illness and survival. Alcohol – we've heard a lot about diet today, sexual habits, sun exposure. Delayed behavior obviously doesn't have a role in causing cancer, but it certainly does play a role in outcome.

Social environment hasn't been as succinctly or as emphatically addressed in this conference. What is the role of our social network? There are very provocative data from Berkman and Syme studies, looking at Alameda County and social support. We know that having good and strong social support reduces the risk of all kinds of illnesses, including cancer, and likely alters outcome. Low education may not cause cancer, but it's certainly going to continue to delay accessing care and survival. Poor or absent social ties we know is a risk factor for health and disease. It may be related to social exposure or risky behaviors that put us at increased risk. And outcome. This is provocative data because this is something where we have a role, where we can easily intervene.

There's the body of research that for some is very provocative. Is there a personality style that tends to cancer, as with cardiovascular disease, where you have a type A personality that might develop cardiovascular events? Is there a cancer type personality? A whole theme was developed by Lydia Temoshok and other researchers in the early years of interest in psychoanalytic thinking in this country – articles published in the 1950's and 60's. I'll show you in a moment what the characteristics of the type C personality are. The other was something about fighting spirit. I'll talk about that in a second, but I just wanted to make a note on psychiatric disorders. For a brief period of time it was thought that health and illness run along a

continuum. You either get a psychiatric illness or you get a physical illness, but you can't have both simultaneously. I regret to tell you, you can be a schizophrenic with cancer. They do not protect one against the other. It isn't that kind of a mind-body continuum. We operate as a dynamic integrative whole, so we're not going to see that kind of a schism.

This is the description of what Temoshok might say is the type C personality. A very pleasant, unassertive person, with inability to express emotions, is the underlying linchpin. There was some suggestion from old Johns Hopkins medical student data that difficulty relating to family members might also be a risk factor for disease. The data for this is insufficient. There have been no good studies defining this type C or constellation of personality characteristics and long-term outcomes that have been shown to hold up rigorously. Those of us who are practitioners also realize that a lot of the people that we see – cancer is a very egalitarian disease. Young, old, white, black, Hispanic, Asian individuals present with this disease. I do not notice one characteristic or style of person presenting in my office. Our ability to find a type personality is going to be a less successful avenue to pursue.

The work by Pettingale and colleagues in Great Britain looked at the fighting spirit. They evaluated coping styles among breast cancer patients and found that those who manifest a fighting spirit or an active coping style survive longer than women who manifest a hopeless or helpless or stoic attitude. The problem with this data is that they did not control for stage of disease. One question is whether the folks who are in the hopeless, helpless category are also individuals who had more advanced disease and knew that from their clinical involvement. The other important feature on this slide is that while denial falls lower in survival ratio from fighting spirit, it's not a significant difference. In fact, those folks do reasonably well. Denial is not such

a bad thing when you're coping with illness, particularly in early stages of illness, when it may be very beneficial to getting through toxic and noxious treatments.

We move on to an era of somewhat more sophisticated research in the 1970's, 80's and now into the 90's, where we have psychoneuroimmunology. There have been a number of studies looking at stress and the incidence of cancer. Some of these have come out of the bereavement literature – Steven Schliefer's work, Marvin Stein up at Mt. Sinai in New York looking at bereaved individuals. While they do see immune effects of bereavement, there's not been any strong evidence that this causes cancer.

Depression – epidemiological data looking at individuals who had depression. They don't go on at a higher rate to develop cancer, providing lack of support for that type C constellation. Anxiety – there's been some interesting thought. Bernard Fox, who has been a long-time critic and a guiding voice, has suggested that repetitive stress, repetitive anxiety may be something that we should look at on a more systematic basis. There's at least one study suggesting that stressful life events may increase the rapidity with which a recurrence occurs, but again, that data needs to be replicated.

The last body of research, and the most current, is the whole area of psychosocial interventions. I'd like to talk about what we know with regard to psychosocial interventions and cancer in a broad framework. One question we ask is, how effective are these? We know from a recent survey conducted among NCI-designated comprehensive and clinical cancer centers that 100% of these centers offer support groups. That tells you how pervasive this is. 100% of them offer support groups. They may vary in nature, how they're run, who attends them, but 100% of the centers are offering them. A very provocative study was reported at the DOD Era of Hope meetings last fall by Marion Lee and colleagues including David Eisenberg. They looked at the

use of alternative therapies in a cohort of about 360+ women drawn out of the tumor registry in the San Francisco Bay area. They found 64% of those women were using some form of complementary therapy. Their data actually had some very interesting patterns with regard to cultural backgrounds – what African American women use versus their Latina population versus their Chinese population – very interesting data.

As Henry said, there are now two major meta-analyses that have been conducted looking at outcomes with psychosocial interventions in cancer in adult settings. What one has to bear in mind is that it means looking at interventions that may have included a variety of different types – educational, behavioral, psychodynamic, supportive, those that included biofeedback, perhaps massage therapy, visualization and imagery – a very diverse set of interventions are being looked at and compared here. The purposes for each of these interventions may have been very different. In other words, they may have been designed just to improve knowledge, or to decrease emotional distress, or improve emotional functioning. The goals of the therapies may have been very diverse, so you have two things that are very different here.

From a technical point of view, the type of cancer for the patients who were included, the severity or stage of illness may have been variable, the instruments used were different, etc. You think it is going to be really to hard to do a meta-analysis here because we're comparing apples and oranges, but that's what a meta-analysis permits you to do. It takes very complicated mixed data with small Ns, which is what a lot of these studies are, and enables us to say something in a summary form. This is what Meyer and Mark and the article alluded to in *Health Psychology* in 1995 did. They reviewed 45 studies reporting on 62 treatment-control comparisons among predominantly white female adult cancer samples. They were drawn from published randomized trials in which adult cancer patients received a psychosocial, behavioral or psychoeducational

intervention that was compared with another group of cancer patients receiving no intervention or minimal interventions.

The effect sizes were not dramatic, nor would Meyer and Mark say they were dramatic, but what we can say first and foremost is that a variety of different interventions are helpful in improving patients' quality of life. A variety – it wasn't any one. There's a large package of these that are effective. Secondly, in those studies that did try to compare group versus individual interventions, group appears to be as effective as individual. That's very helpful from a pragmatic point of view if you want to actually deliver something to a large number of people. Many would argue that in fact the group format has particular importance and meaning for intervention in the cancer setting.

Thirdly, patients participating in the interventions did no worse than controls. We cannot say that for all of our medical therapy. This is a very important point for us to make. These patients don't do worse. If anything, what we could say is it's a sad commentary that anything that you do, if you want to read this a different way, is better than standard care, because that's what this data seems to suggest. And finally there's the provocative data – I'm going to take a show of hands in one second about how many people are already familiar with this. It's so important for everybody to know about these two studies in particular because they're paradigm-shift studies in the field of psycho-oncology. But let me just conclude with regard to the Meyer and Mark data. They did say that psychosocial interventions have shown proven benefit to adults and cancer with regard to affective state – anxiety, depression and mood – with regard to physiologic arousal and controlling nausea, vomiting and pain, and with regard to general well-being as impacting on coping, knowledge and interpersonal relations. We have therapies that work.

How many of you are not familiar with David Spiegel's research? I guess we've got to talk about it. Okay. David Spiegel, who was a psychiatrist out of Stanford University back in the late 1970's with Irving Yalom, "Mister Group Therapy." For those of you who are mental health professionals, Irving Yalom wrote the book on group therapy. They decided that they could do something for women with metastatic breast cancer to improve the quality of their life, and that's just what they did. They ran a randomized controlled trial for women. Roughly half were randomized into the intervention group and the others into a control group, standard care. All these women were receiving some kind of ongoing medical treatment for metastatic breast cancer. The intervention consisted of group support, psychotherapy and some training in self-hypnosis for pain control in particular, and some family therapy. Women went every week for 75 minutes for up to a year for as long as they survived. The providers were a psychiatrist, a social worker and lay counselor. Over the next several years they published a variety of papers showing that their intervention could decrease mood disturbance, reduce phobias, reduce maladaptive coping, and decrease not the amount of pain but pain perception. They would have stopped right there. They were happy with that data. That was it. They went on to other things. That study would have been buried.

However, David Spiegel became very concerned because he had patients coming back to him, women who had been treated for cancer, who had a recurrence. They said, "I must have caused my cancer. There's something that I'm doing. I'm thinking my way into this. My beliefs must be causing cancer." He was appalled by that, thought it was unconscionable, and he said, "I'm sitting on data. I can show you that interventions improve quality of life but not quantity of life." That is what forced him back into a retrospective, actuarial analysis of the survival data from this study.

Dr. Spiegel went back to see who was still alive and who wasn't alive. He found, much to his shock, and published in *Lancet*, data that suggested that women who participated in this intervention lived twice as long. The next slide shows the survival curve. If you showed this in a medical conference and didn't say it was a psychosocial intervention, this would be considered a dramatic therapeutic effect in a population of women who have metastatic disease. This data was very provocative, caused enormous ripples in the field. Most people who had been working in the area of psychosocial oncology have felt we can improve quality of life, but not quantity. They're in the middle of a replication study that's being done simultaneously up in Canada. The data should mature in a year. We're all holding our breath.

Finally, there's the Fawzy data – a very different kind of study here. I sometimes refer to this as the managed care study. This is quick, simple and easy to apply, and if it works, it's cost-effective. What Fawzy did at UCLA with his colleagues is develop a psychoeducational structured intervention that he designed for early stage melanoma patients. These are surgically treated individuals who expect to be cured of their disease. It was a randomized controlled intervention study. Half the patients got nothing and the other half participated in six weeks, an hour and a half a week, of an intervention that had essentially four components – education about taking care of skin, looking after yourself, sun exposure, etc., problem-solving skills about the kinds of difficulties one faces when one is diagnosed with cancer, stress management, relaxation training, and just general support provided by a psychiatrist and a lay counselor.

They looked at some immune functioning, and they found that their intervention was very effective in reducing distress, in improving active coping. They found some very interesting immune data. Although if you were to ask an immunologist, the perturbation or changes weren't at a pathological or a dramatic level, they were provocative. He now has six-

year data and these are the survival curves. The lower curve represents individuals who are in the control group and the top dashed line is the intervention group. This is a significant difference in survival – not in rate of occurrence, but of survival from this disease, melanoma. Six sessions, an hour and a half a week, good stage prognosis in here – these are amazing results. Again, they need to be replicated. These are two important studies that have shifted the field where we need replication and these are manualized. This particular intervention is in fact manualized. It was manualized for breast cancer, not melanoma. Anybody can do it if you're out there running groups.

I'd like to conclude by saying where I think the challenges are in the field for us today. First, who needs or will benefit from what kind of psychosocial intervention, and when, in the course of care? Who should deliver these interventions, and how should they be trained? How should we monitor the quality of what is being delivered? Is there a dose response? Few of these studies have looked at how much time is spent with an individual, or how intensive the intervention is and its efficacy. There haven't been studies that did a little bit and a lot. (It's interesting that Nancy Fawzy, Fawzy's wife, did a nursing module of the same study. She tried to deliver this from the point of view of a clinical nurse, and has quality of life data, but I haven't seen the survival data. I don't know if there will be any, but she at least did try to say let's take this and compress it, do it for different individuals delivering it and see what happens.)

Fourth, can we agree on how to measure outcomes, including quality of life, disease and survival status and cost of care? And then, two philosophical questions – one is, what risk do we run if we make our target quantity of life and not quality of life? And finally, more a plea than anything else, until we incorporate these types of interventions with conventional care, they're always going to be an adjunct or ancillary to the treatment of patients. An example would be,

let's take the breast cancer model. You randomize a study. Half the women get their chemotherapy and standard care. The other half get chemotherapy and a support group or whatever it is for that module, and that's the clinical trial. It incorporates that piece. It is part and parcel of the treatment. Until we can do that, alternative and complementary and all of these what are now considered adjunct therapies will remain in that adjunct status. Thank you.

Mr. Dreher: Thank you, Dr. Rowland. As a fellow New Yorker, you've earned your fast New York talker stripes.

Our next speaker is Dr. Alastair Cunningham, from Toronto. He is a researcher who has long explored the role of psychological factors in cancer, the role of psychological interventions and psychosocial interventions. He's the author of a fine book, *Healing Journeys*, and the founder of the Wellspring Cancer Center, a multimodality cancer treatment program. He has written some extraordinary articles and is one of the visionaries in the field. He also has some important data, preliminary findings on a controlled clinical trial that he's been conducting.

Dr. Cunningham: Thank you, Henry. I don't talk quite as fast as Julia, but I do talk a little bit funny, having been born and raised in New Zealand, though I now live in Canada. I'm a researcher at Canada's largest cancer institute. For many years I've been developing group programs and evaluating them, and the end point has been quality of life. I'm also a cancer survivor myself. I've become convinced that, at least in our local area, quality of life is not going to change medical practice.

I do take note of Julia's caveat, that if you focus on prolonging length of life you can back yourself into a corner. Nevertheless, demonstrations that psychological intervention might

lengthen life would be more convincing to most physicians and might accelerate the rate of change in this area, which is inimitably slow in spite of Henry's very fine articles. So what about that? What about the evidence for the mind and the spirit affecting length of life? Julia has very kindly reviewed some of the latest studies. It helps me no end. Through the long history of anecdotal reports, of course, there are a lot of animal model systems. There's a rather confusing literature on personality and how it relates to cancer survival.

In recent years there have been intervention studies, which have got us all excited because they seem to provide better evidence. That's understandable, if you just think about it for a moment. If cancer's growing in your body, it's not going to change its rate of growth unless something happens in the environment that it's growing in. That's what I tell my patients. It's common sense. That something can be from external or it can be from some change by the mind, in your *milieu interieur*, in your soup in the body. An intervention is likely to be needed to change the rate of growth of a cancer. It's very good to see the studies by Speigel and Fawzy, and there are other trials. Leslie Walker's work in Aberdeen is little known. Thomas Kuchler – I don't know that it has been published here. You may know about it. Richardson and others. A number of randomized trials are being done.

What does a randomized control actually do? It asks, does this intervention prolong average life span? It says nothing about individuals. It's a very good way of asking that question, but it has limitations. If there's a lot of heterogeneity in the population, if some patients are doing a lot of work and perhaps healing and others are not, you may lose that effect in the group mean. Also, by the same token, it tells us very little about the mechanism that's involved. But it's the state of the art, it's the fashionable way to do it.

My next overhead shows our randomized trial, which has reached the five-year point. This is analyzed data. It's a randomized trial with metastatic breast cancer patients, done more or less with the same intervention as David Spiegel's with the addition of some behavioral training. It was done by a very experienced team, and the statistics conducted by our institute's statistical team. We don't see a significant difference at five years. The statisticians think it's unlikely that there are enough patients left for there to be a difference at ten years. There are about 25% of people left alive. Perhaps there's a slight trend in favor of the intervention groups, the B's, but it's not statistically significant. How are we going to resolve this?

There is a resolution to this problem, and we need a different kind of experiment to do it. We need correlative experiments. We need both. A correlative experiment addresses a different question. It's important to be clear about that difference. It asks, what properties of individuals relate to longer survival? It does not ask whether the intervention has an effect, so much as it asks what it is that people do, individuals do, that has an effect. From psychotherapy outcome research we know the nature of the intervention matters very little compared with what the patient does with it.

The focus is shifting away from intervention as drug, and towards correlating what people can do that appears to prolong their life. Are there any studies of this kind in the literature? The answer is no. There's nothing much in the literature where an intervention has been used in an attempt to prolong the lives of individuals with a correlative design. I will show the experiment we've been doing off and on without much funding for about five years. I call it the healing journey study. Contrast it with the closest one can find in the literature, which is some eight or ten reports on remarkable survivors.

What would be the characteristics of an ideal correlative study? First of all, it should be prospective and longitudinal. Patients should be selected before they have remarkable survivals, not afterwards. You see the problem you get into if you pick people long after they appear to have done really well and ask them what they did that made them survive. They say I ate grapefruit, nothing else for six weeks. That sounds very impressive. Then you find there are 99 people who also ate grapefruit and nothing else and did not survive. You have to have a denominator. We need to look at everyone. We need to do it prospectively and longitudinally. We need an intervention to change the *milieu interieur*. We need very good medical documentation, which is missing in virtually all of the reports of remarkable survivors, by experts. We need very good psychological documentation. The experiment becomes, can you put the psychology together with the medical outcome? See the experiment? It's correlative. The limitation is you can't strictly assume causality from a correlative experiment, but you can build up a case, as has been done with smoking and lung cancer.

Here is the design of our experiment. I want to show you the first few subjects in it, then tell you about the medical documentation and the psychological documentation. The results will be preliminary, the numbers are small. You don't need huge numbers in this kind of experiment. In fact, anyone willing to do the work can do it without a big trial, because you don't need controls, you just need very careful medical and psychological documentation simultaneously.

Our experiment has been to work with people with incurable metastatic cancer. They enter our support program. We have quite a large program, but we're dealing here with just a very small proportion of these people. They're in the therapy group for up to a year. They get weekly support and also training in all the things we all know about – relaxation, meditation, imagery, goal setting. Spirituality is a very strong component of our program. We collect data –

written homework and written notes by the therapists and occasional interviews at intervals, at least weekly intervals, alone. Then they go into a support group if they're still alive at the end of the year.

We'll be publishing on the first 22 subjects shortly, but the first 13 are on the next overhead. These people all had, as you see from the diagnosis, intractable metastatic cancer of different kinds. I've arranged them in a particular order. I've arranged them in three blocks. The top three are people who had very good, either remission or very long survival compared with what was expected. I'll explain how that was decided in a moment. The ratio of living longer than expected was almost five, almost four, and so on. At the bottom we have low impact people who didn't live longer than expected, and in the middle as you might expect we have a graded series.

The argument I'm going to make does not come from looking at any one remarkable person or unremarkable person. It comes from looking at everybody who came. It comes from the series and saying the ranking of these people in terms of their survival is related to the ranking of them in terms of various psychological characteristics. That makes a much stronger argument than looking at individuals, or so we hope. We had about 150 hours of contact with each of these people in a very small group.

Let's look at the medical documentation, which is important. We wrote a list of prognostic factors for each patient and submitted them individually to a panel of 14 oncologists, that's one by one. They were shown the patients and asked, if you had 100 people like this patient, draw a survival curve. That's what they've done. Here something like 14 oncologists have drawn survival curves for the lady with pancreatic cancer. Incidentally, you might ask

yourself, which of these physicians would I rather have treating me. That's the time of death. There's a lot of spread. That's interesting in itself.

The next overhead shows the average curve that you can draw for all of the panel, and then you can calculate some kind of a ratio of how this person died compared with what was expected. If we compare with the median, her observed over median is five. She lived about five times longer than expected, which obviously appears to be very good. This is not perfect, but it's the best we can do. If anyone can think of a better way, let me know, in trying to predict the survival of individuals. It's notoriously difficult. We have, however, calibrated the method and using a number of predeceased patients from our own institute, the panel was quite good at predicting the average life span.

The psychological documentation – I'll have to be really brief. This could take an hour. We used qualitative methods. We found that the standard questionnaires, which are not designed for this purpose, don't work. We used qualitative methods as one does whenever variables are complex and hard to quantify. One doesn't know quite what's going on. You collect a lot of data, hundreds of pages, enter it into the computer, using specific programs. Ours is called NUDIST. Define a number of themes and their interrelationships and construct hypotheses. You could see our experiment as a hypothesis-generating experiment rather than anything definitive. That would be a fair characterization. I'm going to show you one or two results.

I can't hope to get through the qualitative stuff so I'm going to show you our attempts at quantitating the psychology to relate it with the quantitative medical results. About 40 main categories that emerged from our analyses were examined by a team. A rating was written on a five-point scale for each of those characteristics. For repression, one might be extremely repressed, unable to express any emotion, and five might be very free and open with their

emotions. We wrote scales, and then we went through all the patients as a team and we gave them a rating, one to five, on each of those characteristics. It's somewhat crude, but now you can compare these ratings with survival, you see. You can ask does spirituality, as we've defined it, correlate with living longer? Does repression? Or does some mixture of these qualities, or does the whole lot together correlate with survival? That's the next graph I'll show you.

When you put all of the psychological ratings for all of the characteristics – you see a hand-drawn line only, this has not yet been done by a statistical regression analysis, it's just been done by hand – the three patients who you may remember from the list were good survivors up at the top right. The three who did best in terms of survival very much did the most psychological work. The three who did worst did the least, and the rest are in the middle. That's a retrospective rating. This is an exploratory study. That rating was done after we knew what was happening to patients, or most of them. We probably have a better correlation there than there really should be, but we do have some prospective data.

The next one will show you a little looser fit, but these were ratings made before we knew what was happening to people on the basis of an interview. The groupings are exactly the same. The same three people were up at the top, the same three down at the bottom, and the same people in the middle, almost in the same order. It's a bit eerie. The next one is the quality we found most highly connected with living longer – lack of defendedness – an openness, a flexibility, that's a very tight fit. And the next one will show you calculations for these qualities for this sample of patients. They're around about .7 with the openness which we have called here “ability to change,” and a remarkable correlation of about .86. I wouldn't want you to get too excited about that, because I think it's probably inflated. When we get into our next round of

experiments which we are planning and hope to get funded, we will make sure our ratings are prospective. We'll have an independent panel of raters blind to the origin of the patients, and that will certainly bring it down a bit. But it won't bring it down too much.

As our prospective data show, the effect is very strong. The effect is extremely obvious to us as clinicians. Those people who work and get involved live longer, by and large – not always, but by and large. Those people who reject and just come along for the support don't live longer, and there's a graded series in between. I sound reasonably confident about the effect on the basis of a fairly imprecise experiment because it is such an overwhelming effect. However, if you average it out it doesn't work too well, and that's what's happening in the randomized controlled trials. The good-doers are being diluted by the people who are not doing so well.

I have one more table, which is conclusions. It's feasible to investigate in detail. This will have to be the next round of experimentation, regardless of what happens with all the randomized trials. No doubt some will be positive and some will be negative and people will be able to argue there's nothing in it. The next round is to look at people in detail and look at mechanism – that's the information we need to design better therapy. The present study, as far as it goes, supports a relationship. There appears to be a correlation between more psychological work and change and longer survival. A couple of our people have had complete remissions of metastatic disease. It occasionally happens. Many of you have perhaps seen that in your own practice.

Quantitative analysis demonstrates profound psychological and spiritual changes in some of the patients attempting to oppose their cancer. I have not unfortunately had time to document that for you. It appears reasonable to characterize healing as a progressive psychospiritual process in at least some people with cancer. One of the interests of this area is that it goes

beyond healing, doesn't it? It goes beyond cancer and even chronic disease. It goes into the area of how the symbolic or psychospiritual realm can affect the material. That's something that is of great importance to us all if we are going to survive. Thank you.

Mr. Dreher: I thank Dr. Cunningham for his presentation of some very provocative data, provocative questions about methodology, and some new methodologies we may begin to employ in looking at these interventions. I'm sure there will be some questions. We'll be taking questions after all presenters have completed. The next presenter is Dr. Mary Lee Esty, a 30-year cancer survivor and creator of the group program format for the Center for Mind-Body Medicine. She is certified in biofeedback, hypnosis and EEG neurofeedback. She began in 1992 the Mind-Body Self-Regulation Group treatment program that integrates all of these methodologies. She is co-principal investigator of an NIH research grant using a form of EEG biofeedback for treating traumatic brain injury, a treatment that also may have some applications for the side effects of cancer chemotherapy. In the fall she'll be facilitating cancer groups for participants of the Smith Farm Cancer Help Program. This is the Washington, DC version of the Commonwealth Program from California, Michael Lerner's program. It's my pleasure to introduce Mary Lee Esty.

Dr. Esty: I feel so young. Today I'm going to address three topics from a clinician and a cancer patient's viewpoint about integrating alternative therapies: 1) how I got started combining these techniques, 2) what I observed along the way – I'll be reviewing some new results of a group intervention, research that we did at the Center for Mind-Body Medicine, that was completed yesterday, so you heard it first here, and 3) my current thinking about how to

make alternative therapies more effective for cancer patients, and what the future may look like in this field, what research needs to be done.

One – how I got started combining these techniques. I had cancer 30 years ago, struggled with lymphedema for 25 of those years. Along my healing journey I learned and used most of the therapies that we now call alternative. That word didn't exist back when I was diagnosed. Every one of these gave me something that felt right. I was interested in the overlap of these as the years went on. Cancer was the beginning of this journey for me.

One of the first turning points was a self-hypnotic practice called autogenic training used with biofeedback, a combination I learned from Patricia Norris of the Menninger Clinic. At Meninger they used thermal biofeedback and brain wave biofeedback in a treatment program for cancer patients. I hope that the book by Porter and Norris is here. It has two titles, *I Choose Life*, and another one is *Why Me?*, but I think *I Choose Life* is the current title – a very interesting book. I explored this work using biofeedback, both skin temperature biofeedback with EEG for some time with myself and then with my clients. Another significant point was Jim Gordon's invitation to lead some groups at the Center for Mind-Body Medicine. He invited me to teach people these alternative practices, including autogenic training, biofeedback, imagery, visualization, and breathing.

It was from Jeanne Achterberg that I first heard the phrase that every treatment helps someone and there's no one intervention that helps everyone. That stuck with me for a long time. It speaks to the importance of individual differences, which is what makes research in this field really quite difficult. This philosophy of individual differences was behind the format that I chose in starting these groups in 1991. The foundation sprang from my conviction that the most valuable tool that people could be given, and find useful for a lifetime, was a combination of

autogenic training, the self-hypnotic technique, and thermal biofeedback. With the information that one gets about one's own physiology from this little tiny monitor, people are able to see if they have changed their own physiology, associate that experience with a new self-awareness, and be able to use that skill throughout their lives.

They're actually impacting the autonomic nervous system, and this control can be learned in a way that's really quite simple. The end result, when it's successfully mastered, is the counteracting of the fight or flight response. It's still my conviction that this simple bit of information is like a signpost along a road saying "go this way." It doesn't mean there was anything wrong with their choice of practice. It was just that they weren't responding the way that they thought they were and they weren't responding as completely. So biofeedback can be a powerful aid to learning.

For a cancer patient, this experience of getting some control over one's own physiology is very powerful. It comes at a time in life when the body feels totally out of control. I've been there. I know a lot of you have. It's like, "What happened to me? What's wrong with this thing I walk around in?" People learn that they can change the way the body functions. It's a powerful feeling, one that can generate a new capacity to forge ahead and do the best with all the help that's out there. It was my intent to use the group format, the group interaction, its own special magic, to teach these practices whose potential for positive effects on health were backed by research. That's why I chose them. The list of these practices is in the brochure in your packet about the training that the Center provides. Nancy Harazduk will probably discuss some of this in practice on Sunday. I ran groups for four years, once had four different groups a week. Before I began the first one, I knew exactly what would work for everyone. I had a lot to learn, and the group participants were great teachers.

Second point – what I observed in response to combining these techniques, and what are the impacts of the experience. Yesterday I was handed the results of a study that we did at the Center. We had ten different groups of people with a variety of chronic life-threatening illnesses, including cancer, AIDS, and many others. There were 84 participants on whom we had pre and post data. There were six different measures. I won't go into them in the interest of time here. After 12 weeks of group involvement (each group met 12 times), the members reported a greater sense of control over their illness, an increased purpose in life, a more optimistic outlook, and enhanced mood. Additionally, they demonstrated greater ability in regulating their autonomic nervous system through biofeedback. This coincided with the report on decreased symptom intensity.

This study suggests that self-regulation groups are instrumental in beneficial psychological and physiological change for those living with chronic illness. The acquired skill in regulating autonomic nervous function is particularly important. The control of the autonomic nervous system may have direct and indirect effects on immune function. Barry Gruber and his colleagues published a study, I believe in 1993, where they used biofeedback-assisted relaxation techniques with imagery with breast cancer patients and reported significant findings on four different immune system measures following that study.

Helping patients gain control of their physiology may have medical benefits as well as the psychological benefits indicated above. The reduced intensity of symptoms may be the result of a change in perception or actual sensory changes due to autonomic regulation. Those are the words of Dr. Robert Hayes, the researcher who has put this data together. Many treatments work for a while, and then the effects fade, these psychological interventions. In follow-up interviews with five of my group participants a year after they had completed their group participation, I

found that they continued to produce profound and satisfying physiological changes. Lifestyle changes had either held or were strengthened in some way. It would be wonderful to have further research to follow these participants over time, and see how they do.

This brings us back to no one treatment working for everyone. The multiplicity of practices introduced in the group program gave people an opportunity to explore several experiences and choose for themselves what seemed to work best. It's a highly individualized approach, even though it occurs in a group. Everything that a person takes away is based in his or her own personal choice and experience. They take what works for them. This way we don't hear people say, for example, "I failed imagery." How many of you have thought, I can't do images? I hear that a lot.

So what are the health benefits? There are five benefits of these practices for any health problem. One is balanced blood flow throughout the body as control of the autonomic nervous system is learned. That seems essential to counteracting the responses of daily stresses and learning to return oneself to a balanced state. Two is reduction of the effects of the stress hormones that may negatively impact immune system functioning. Three, the ability to enter more than one quality of altered state of consciousness, and there really is more than one. Four, increasing self-awareness of one's own responses to life and what it brings to us every day. I think of it as a kind of relapse prevention. Establishment of a lifelong practical personal practice for preventive self-care that's flexible to one's own particular daily needs. Once learned, these practices can be adapted to any situation, whether you have one minute or thirty minutes. The way we live today, we need that.

Despite the good results that this work was producing, I was puzzled by those few people who just didn't seem to respond as well as others. We clearly don't have all the answers. Every

treatment approach has its wonderful success stories. What we often don't hear about are the people who don't respond. The therapy field uses the term resistance to describe these situations in psychotherapy. The recommendation is usually more therapy. I no longer believe generally in resistance. It's more useful to assume that we just don't know enough, that we just haven't found the right key for that person's lock.

The puzzling situations are very interesting to me and keep me looking for answers, which brings me to topic number three – a new way to think about integrating therapies, and how can we make our interventions more effective? The latest intersections on this healing journey of mine, and my clients, is the ongoing contribution of my friend and colleague, Dr. Angelo Bolea. He's a local neuropsychologist with a sweeping understanding of brain functioning and human behavior. His knowledge makes it possible to make therapy more effective and has contributed enormously to my own practices. He offers courses in brain functioning that are truly remarkable and practical. The neurotherapy research and brain research findings can be used to increase the effectiveness of therapies for integrating the physical, emotional, mental and spiritual realms.

We can use the sensory response structure of the brain as a guide to making our interventions more effective. It was curious to me that with the people who didn't respond, some guided imageries, visualizations, and inductions were more effective than others. I couldn't understand why. There was research by Tansey and Tashiki about the effects of certain words and phrases on brain wave states. It suggests that sensory words, such as see and feel, produce very specific effects in two parts of the brain wave spectrum that are associated for our therapeutic purposes with desirable brain wave states. I looked at the favorite visualization scripts I had (by favorite I mean the ones that people had good response to in general). I found

that they used those words. The ones that I thought made a lot of sense used a lot of words but didn't have very many of those sensory words in them. I modified other scripts and they began to get a favorable reaction. I was going to show an overhead of the sensory homunculus, but in the interests of time let's skip that. If some therapists or anybody is interested, talk to me afterwards. I'd be happy to talk about it.

Second was how to integrate left and right brain functioning. Do any of you know left-brained people? There are a lot of us out there. When the left and right brains work together, then emotional and intellectual functions can link, enhancing physical function, including, I believe, immune system functioning. The EEG biofeedback therapies use the model of teaching the two hemispheres to communicate more effectively. This can be quantitatively measured.

One way to help the brain hemispheres to work in balance is to understand why something works. Make sure your client understands why something works. While they do that practice – yoga, meditation, for example – and experience the physical sensations and emotional effects, it begins to combine with the left brain, with the intellectual understanding about the benefits. You get a deeper emotional physical response. It's a whole brain response. This is what happens in the cycle in which motivation is developed. Cognitive understanding leads to motivation to meditate, or do visualization, whatever one chooses, leads to a pleasant sensory response, leads to an emotional response, leads to a calmer state, a reduced autonomic arousal. This deepens the appreciation and understanding about the effects and reinforces the motivation to keep doing the practice.

What does this mean for cancer patients, therapists, physicians, working with cancer patients? It highlights the need for the helping professions to be acquainted with a variety of approaches, to bring an intellectual understanding of how these work. Wonderful supporting

care by therapists is not quite enough when so much is wanted from us. We can do more to help people. The more we understand, the better choices we can make for our clients. We can enable them to keep their body at the best possible level of functioning, to have fewer side effects from the cancer treatments, to recover from surgery faster and with better results, and to use the allopathic therapies more effectively.

Point number three, clinical observations and speculations about neurotherapy and the immune system. Where are we going from here? I had to smile when Dr. Benson put up his brain wave slides. It made me feel like I was at my EEG conventions. I got a little confused there for a moment. I didn't expect to see those today. The most recent interchange on this healing – what feels like an expressway now since so much is happening in this field – has led to brain wave treatments that are receiving very wide recognition and have implications for immune system functioning. Four years ago, Dr. Len Ochs of Walnut Creek, California introduced me to a new kind of neurotherapy. This is the treatment modality that I'm using now for reversing the cognitive deficits of brain injury in the NIH study. We'll soon be starting a fibromyalgia study based upon a clinical medicine journal research article which shows that EEG training with fibromyalgia actually can reverse the effects of fibromyalgia which also has immune system problems associated with it. This has implications for cancer patients.

Major changes using these therapies in behavior and physiology can happen extremely quickly. Some of these changes were not thought to be possible. With proper intervention, brain functioning can be altered and biofeedback research and clinical observation suggest that there are immune system effects. I mentioned the work of Barry Gruber here in DC, published in 1993, showing significant changes in immune system measures following just very simple interventions, very short interventions. This past year, within the last 12 months, the work of Dr.

Marian Diamond at Berkeley suggests that the left frontal cortex of the brain may be an extremely potent force in immune system functioning. The results clearly demonstrate the manipulation of the neocortex has a specific role in immune function. That's quoting from her article which appeared in *Brain*.

Clinical work with neurotherapy also suggests that enhanced communication of the right and left brain leads to better health. For example, children who have attention deficit disorder – neurotherapy work has been done with them for more than 20 years. What's observed clinically is that they have many upper respiratory infections. They miss a lot of school. But once they've been through the therapy, over their symptoms, they don't get ill the way they used to. The brain learns somehow to function at a better, balanced state, and health improves. When people are symptomatic, the brain wave spectrum is always in an unbalanced state. That can be measured. That imbalance usually involves the frontal lobes, so what Dr. Diamond is reporting fits very much with the clinical observations of neurotherapists. As frontal lobe functioning improves, symptoms and behavior change. All of this work has major implications for research and clinical practice.

What does this have to do with spirituality? It sounds pretty mechanical, right? Neurotherapy, all this stuff being measured. I had an end-stage colon cancer patient who came in in a lot of pain. We decided to do a brain wave training session with her. She looked extremely blissful. She is hooked up to a computer, she's getting some feedback, her eyes are closed, she's in a relaxed position. She did this for about 20 minutes, and stopped on her own. When she opened her eyes she said, "I don't have any pain. I just had the most wonderful walk, hand in hand with Jesus. Now I can die in peace." And she did die.

I couldn't have done that with talking. Our new frontier may be the broader investigation of brain function, with neurofeedback as a way to measure what's happening, what are we doing, what works best. Whatever happens, the goal of integrating therapies will always be to integrate the physical, emotional, mental and spiritual realms. Thank you.

Mr. Dreher: I want to thank Dr. Esty for that really wonderful presentation. You raised a lot of interesting questions about psychoneuroimmunology which we haven't spoken about much today. Maybe that will be a topic for discussion when we're done here. What do we know about the science of the link between the central nervous system and immune system that may be relevant to cancer? It's a critical area.

I want to introduce now Ellen Levine. We had planned to have Elisabeth Targ here, who is an important researcher at UCSF in the California Pacific Medical School. She has done extraordinary work researching distant healing prayer and its effects in medicine. We got the best possible substitute when Dr. Targ was unable to be here. We got her co-director of the breast cancer personal support and lifestyle intervention trial at the California Pacific Medical Center in UCSF, and her co-principal investigator of the efficacy of a retreat for low-income women with breast cancer, another important research project. I'm very happy to introduce Dr. Ellen Levine.

Dr. Levine: As I was sitting here listening to everybody talk, I thought I was going to come up and say, "And now for something completely different." In your books it actually says that Elisabeth Targ is going to talk about Qi Gong. That's not going to happen. A) I'm not Elisabeth, and B) I'm not talking about Qi Gong. I'm going to be talking about a study that she

did. It's not a cancer study per se. This is a study of the effect of distant healing in advanced AIDS patients. Besides the first authors, Elisabeth Targ, Fred Fisher, Dan Moore and our late colleague Helene Smith, these are some other people that contributed to this study.

Elisabeth keeps telling me I'm supposed to be on that slide, but every time she runs it I'm not, so I don't know what the deal is. The purpose of this study was to look at the concept of distant healing. This is a term that we adopted to describe a variety of healing effects. This is a definition we came up with for distant healing: a conscious and compassionate act of mentation intended to benefit the physical and or emotional well-being of another person at a distance. This is a modality that's used widely in the community. As you heard, there are a lot of data about people using complementary therapies, and prayer is one of them. One study showed that an average 30% of the public and about 75% of hospitalized people pray for their health.

This is a rather famous study that Byrd did at San Francisco General Hospital, where he had 393 patients who were prayed for. The patients did not know that they were being prayed for. Half of the sample got prayed for and half of them didn't. The patients who were prayed for had a lower severity score and less hospital complications. We tried to dissect out psychological factors and investigate whether, as many people believe, there might be an additional effect that has to do with the healing intention itself. This was a double-blinded randomized design. For those of you who don't know what that is, I'll explain it as we go along.

We had subjects with advanced AIDS who were recruited from the community. We interviewed them, we drew blood, and gave them questionnaires and then we stratified them into two groups. We matched them on the basis of age, number of previous AIDS-defining illnesses, and CD4 count. To be in the study you had to have a T-cell count of less than 200, a history of at least one AIDS-defining disease, and be on prophylactics for PCP. The patients were then

randomized to treatment or no treatment. The treatment lasted for ten weeks, and the outcomes were measured at the end of the ten weeks and then six months later. For healers we basically used the same criteria that you would use with picking any health professional – experience, reputation, and dedication. We picked people with at least five years of experience, experienced in distant healing with at least ten patients, and previous work with AIDS patients.

The healing intervention itself was pretty intensive. Each patient received one hour per day of healing effort every day for ten weeks. The healers were on a rotating schedule. We didn't know what would be the best kind of healing, and we had many different healers of different traditions. We tried to distribute the effects of each healer, so each healer would work on a different patient each week. All the patients were worked on by one of the healers. The healing was all double-blinded. Neither the patients nor the experimenters knew until well after the final data was collected who was in what group. The healing was performed at a distance. The healers and the patients never met each other. The healers were from all around the country. The patients were from the San Francisco Bay area. This was the instruction that we gave to the healers. Since they were of all different backgrounds and had different ways of doing things, we didn't try to modify what they did. We just asked them to hold an intention for the health and well-being of the patient.

The outcome measures we looked at were disease progression, number and severity of new AIDS-defining diseases, survival, and CD4 count. We also looked at medical utilization – hospital visits, length of stay, number of doctor visits. We also looked at psychological variables. We looked at mood. We looked at physical symptoms, and we looked at a various quality of life index called the Medical Outcome Study for HIV Patients.

We did a pilot study before this. We had 20 patients in it, and the outcome was that all of the treatment group patients survived through the six months, but four of the control patients died. We couldn't do a whole lot of statistics because the sample size was too small, so we replicated it with the 40 patients that I'm going to tell you about.

The second study was a matched pair design. Baseline, the treatment group had HIV slightly longer, but that wasn't statistically significant, and they had slightly more severe disease but that wasn't significant either. Seventy percent of the treated patients and 80% of the control patients were on triple medicines throughout the study. All but three of the study patients were at least on protease inhibitors.

These are outcomes. This is the number of AIDS-defining diseases acquired over the six-month period. As you can see, the control group had significantly more diseases. They had twelve diseases, whereas the treatment group only had two diseases – two people had diseases. Illness severity also was different over the six months. Remember I said they were basically equal at the beginning. By the end of six months the control group had a more severe illness than the treatment group. Looking at doctor visits, again the control group had significantly more visits to the doctor than the treated group did. There were way more hospitalizations in the control group than in the treated group, and more days of hospitalization than the treated group.

This is the psychological data. The blue bar going down is from the Profile of Mood States, which measures anxiety, depression, confusion, fatigue and vigor. The less the number the better your mood is. The treated patients ended up being in the negative category which was really good. The control patients had some mood distress, and that was a significant difference as well. The MOS is the Medical Outcome Study – that's the quality of life study for AIDS patients. There was no real difference, and there was no real difference in the number of

physical symptoms that the patients had. Again, this is the Profile of Mood States. If you look on the subscales, the treated group is significantly better than the control group. They had less confusion, less anxiety, less depression, more vigor, less anger, than the control group.

When we looked at the Profile of Mood States, we thought maybe mood is correlated to medical outcomes. That's been brought up already today, so we looked at correlating it. We actually found no correlation with doctor visits, hospital stays. The only correlation we found that was significant was with the medical outcome study. That might be partly because the medical outcome study does have some emotional questions on it. One other thought we had was that maybe the folks who are in the treated group really believed they were being treated, and the folks in the control group didn't, even though they didn't know what group they were in. We asked them. It turned out that nine of the control patients thought they were in the treatment group and twelve of the treated patients thought that they were in the treatment group, so there's really no difference there either.

This is from a municipal bus in San Francisco. These were driving all over the city with that sign, and we thought we had to take a picture of that.

There are some problems with this study. Basically the sample size was very small – only 40 patients. That can have a big effect on the statistics, and we tried to control for that as much as we could. The other issue is that these patients were gathered from different medical offices in San Francisco, and they may therefore have different kinds of treatment plans. We didn't see any difference in the distribution of patients. Because they were randomized, it pretty much fell out, but that could be an issue as well. The study clearly needs to be done again. We're trying to get funding to do a major study like this. I just want to end by saying that prayer won't cure AIDS, research will. We need more research to find out what prayer can or cannot

do for AIDS. This is one study that hopefully in a few years we'll have more data to be able to tell you the effects of distant healing. Thank you.

Mr. Dreher: I want to thank Ellen Levine for the presentation of this really remarkable data. It's a small N but it's still amazing, and worthy of further investigation and discussion. Happily, we have the perfect commentator for this discussion. Jeanne Achterberg has been a guiding light as well as a leading light in the field of mind-body-spirit in medicine for well over 20 years. She's one of the great innovators in guided imagery, having helped to found this whole practice and bring it to the broad public. She is professor of psychology at Saybrook Institute in San Francisco, and co-chaired the mind-body interventions ad hoc advisory panel in the research technologies conference for the NIH Office of Alternative Medicine.

Dr. Achterberg is the author of *Imagery and Healing*, the most important book I think in imagery for cancer, and of *Rituals in Healing*, also a wonderful book. She is senior editor for *Alternative Therapies in Health and Medicine*, perhaps the leading peer-reviewed journal in alternative medicine.

Dr. Achterberg: In every tribal gathering someone is given the great privilege of honoring the ancestral spirits and honoring the spirits of those present and divining the future. Usually this takes the better part of a week. I'm going to take about two minutes. I'm going to honor those present and the ancestral spirits and try to divine the future in this field.

First of all, what you have heard this afternoon is absolutely extraordinary. This kind of research is setting a standard for all of complementary and alternative medicine. The database that has been surveyed today and the database that's been alluded to is absolutely the best in any

of the modalities that are now considered complementary and alternative medicine. I'm not even sure that this should be complementary and alternative at this point. I think it should be mainstream medicine.

I want to start by honoring the ancestral spirits briefly. In 1973, Carl Simonton and I dug through the archives and we found 200-some-odd studies showing the role of psychosocial and emotional factors in cancer. A lot of them weren't very good, but some of them were. When we crashed an NCI meeting, I didn't know what NCI meant at the time. I knew what it meant to crash a party – that was how young I was. I said sure, let's go crash it. We did, and we carried our little list of 200-some-odd studies into that NCI meeting. We were treated like lepers. It was really an interesting time. To see the quality of research at this time, which has expanded far beyond what that NCI meeting was about, which was basically how to deal with depression in cancer patients and how to make people quit smoking, to see these kinds of quantum leaps in thinking is something that I would not have predicted in my lifetime. So congratulations to all of you. It's absolutely stunning.

Concerning the present, I would also say that I'm emerging from a long-term love affair. That's the love affair with methodology, and the love affair with this clinical research of techniques and technologies for interventions with cancer patients. I leave it with deep affection, but there's also another dimension that, for me anyway, has more juice. It's a dimension that I hold out to you, and it has been alluded to by everyone here. There's something beyond the methods and the techniques. There's something beyond. There's something that transcends that. It has to do with the invisible bonds between those who are giving care and those who are receiving care. It's those bonds that will remain when all else is done. The bonds of love, of caring, the bonds of intention, the bonds of attention, of compassion, the vocational bonds that

many of us share when we say, “I am in this work to help other people on this path.” This dimension deserves our attention, as well as the charismatic set and setting.

What we are all looking for is a model. As editor of this fabulous journal, we are going around the country looking for models that can be packaged. I want to tell you right now there are none. There are none. What Mary Lee was saying is absolutely true. You were quoting me to me. I love it when that happens. Everything works for somebody and nothing works for everybody. As we begin to look at these intervention models and these caring models for cancer patients, we need to be real concerned about those two issues. What is it that will work for these people? What is it that I have to offer in this particular cultural setting? Stay attuned to that, because there may be something that’s beyond the techniques, beyond the technology, beyond the interventions that are being offered – the inclusion of something that we might call the invisible bonds. That may be our next dimension in research, to look at how we develop intervention models that are unique to our skills, and the skills and needs of the culture that we’re working in.

As far as divining the future, I want to give you two predictions that were supported by what we’ve heard today. Within about ten years we’re going to have to change our semantic basis for describing this work. It is no longer possible to say what is of mind, and what is of body. The language at this point means nothing. Henry and I were talking about it. In our journal in July he has an incredible article with Candace Pert. It will become a classic. When you read it, you’ll say, I no longer can say this is of mind, and this is of body. Shortly after we have resolved that terminology, we’re going to have to resolve another terminology, and that’s mind, body and spirit. We’re going to have to develop a language base that recognizes that it is all of the same substance. That is going to be a challenge like the world has never seen, but the

data are beginning to support it. The second nature of the predictions is that within most of our lifetimes it will become inhumane and unethical to withhold psychosocial, emotional or spiritual attention from cancer patients. It will be as unethical as it would be to withhold anything else that nurtures them, including food and water.

Mr. Dreher: A very fitting commentary. Thank you.

There were supposed to be some questions on cards. If the host could collect some of those questions and bring them up to me, we can start a dialogue, something we all would like and are hungry for.

I want to echo something Jeanne said while we wait for those questions, and that is the ethical dimension. In a couple of pieces that I've written recently, I've made a specific comparison between the David Spiegel study and some of the chemotherapy data. It gives you a little bit of a basis for comparison. In the Spiegel study the metastatic breast cancer patients who were in the treatment lived twice as long after ten years as those who were not in the treatment. In fact, the life extension for those metastatic breast cancer patients was 19 months. The drug taxol, which in some respects is a very good drug, was approved as the first line therapy for ovarian cancer a few years ago, on the basis of one study of 216 patients which showed 14 months of life extension. That drug, which assuredly had tens if not hundreds of millions of dollars of research and development, and is now a billion dollar drug, made it very quickly through the pipeline as a first line therapy. We have no such effort to get these psychosocial intervention programs implemented throughout the country.

It is a shame, and unethical, that these interventions are not being implemented throughout the country. That's something that I've been on a soapbox about for a long time.

Julia Rowland pointed out accurately that a lot of institutions have support groups, and everyone here is a believer in support groups and supports support groups. I know I do. There's a distinction to be made between support groups and what we're talking about here. There's a good deal of evidence that the kinds of interventions that Spiegel has used and that Fawzy has used have been targeted for cancer patients to teach coping skills, mind-body methods, relaxation approaches, meditation. There's a comprehensiveness to these interventions that adds another dimension that is very important. This may have an important linkage to these wonderful outcomes that we've been citing. That's something to think long and hard about.

I'm going to go through these questions. I'm not sure I understand this one, but I'm going to read it and see what you all think. What cultural paradigm would not be fearful of the beneficial power behind psychosocial intervention? An intriguing question. That implies that there is a fear, there's something in our culture that is afraid of these interventions. That strikes me as being right. I'm not sure why. Maybe someone wants to comment on that. Maybe the medical establishment is afraid that an intervention that does not involve pharmaceuticals or surgical interventions might be useful. There's an economic factor here. I'll let Alastair take the mike.

Dr. Cunningham: It would be a culture where the first requirement for a health care provider would be extensive work on themselves.

Mr. Dreher: For those who discuss spirituality with their patients, have you encountered a situation in which a given patient is reluctant to interact with a given practitioner because of

religious differences? How do you respond in these situations? One other thing, this is re: distant healing. Wow, just wow.

Dr. Levine: Thanks. I'll tell Elisabeth that. One of the things that I didn't mention is we have a clinical trial going on with breast cancer patients. If you're interested in alternative methods and spirituality, come Sunday; we're going to talk about that. In one of our arms we have what's called a spiritual focus group. When Elisabeth and I were first designing this, we wondered how we were going to design something that won't insult somebody. We did manage to come up with an overall definition that we are now using. In our study we have had numerous women from numerous cultural and socioeconomic backgrounds. As far as I know, and I'm the one that does the data and reads the comments, we haven't offended anybody yet. If we have, they're not telling us. There is a way to do it. Some people have said that that ends up being a washed out therapy. I don't think that's true. You can do it and kind of make it pan-cultural.

Mr. Dreher: This is a related question on distant healing. Does the long-distance healing mean holding consistently for one hour?

Dr. Levine: The healers had different ways of doing their healing. Presumably, it was that they held the intention for the entire hour in whichever way that they do normally in their practice.

Mr. Dreher: I have a question for Dr. Cunningham and Dr. Esty. One of the things that I was struck by in their conversation was there's some overlap here. Dr. Cunningham, you

presented data suggesting that there wasn't really a significant difference between the intervention group and the control group in your trial. However, there were strong correlations between the amount of psychological work or change that occurred to patients and the chances that they might be long survivors. That speaks to the fact that we may need new studies that answer not the question of who's getting a certain medicine and who's not. We're dealing with psychosocial intervention. It may be that some people who are getting the medicine are still not getting the medicine. The question may be, who's getting the medicine? That seemed to overlap, Dr. Esty, your point, that we need to individualize these treatments. We're not seeing a difference in some of these studies, including Dr. Cunningham's study, because some people aren't getting the medicine because it's not the medicine that's right for them. I'd like to have you comment, if you would, on that.

Dr. Cunningham: Well, you've said it Henry, really. It's a little bit like a drug study where 90% of the patients flush the drug down the toilet. I mean most people don't do much in my experience with the psychosocial intervention. A few get really involved, and those seem to be the ones who do really well.

Dr. Esty: I can second that. It has worked in the data I referred to for the Center for Mind-Body Medicine study that just came through, and my own follow-up interviews with people who had been through the groups – everybody was doing something different. The basics were there. They were still using their own skills with the biofeedback to get themselves into a better healing place, but they had all devised something totally different. Things I could never

have dreamed of. We're all different from each other. It just seems a natural path to let people choose what works best for them. There's no way I could possibly know what that is.

Mr. Dreher: I just want to say one thing. I want people to feel that if they have a spontaneous comment or question based on what's being said here, that we not just limit it to the cards. I see that Dr. Siegel has a question.

Dr. Siegel: It's not a question, but I sent out 100 letters for patients with cancer inviting them to a group so they'd live a longer, better life. Twelve women showed up. We said, "If you want to join you have to read a book, fill out a form and draw a picture." That excluded over 80% of the people, so you know, again those were choosing to do something. That's where groups may vary, too. If you have to do something to get in, then you're choosing someone who is willing to participate.

Participant: Could it be true that the women unfortunately don't have the belief that they can do anything and therefore they didn't respond?

Dr. Siegel: No, it wasn't just women. What I learned was that women were also more into survival....

Participant: You've got to believe you can do anything when you're faced with an illness that's going to kill you. Believe that you can do something, and that's why we are here today.

Those of us who are here who are survivors believe we can do something. We can't just sit back and do the chemo

Dr. Siegel: I'll mention that tomorrow, but that's what the quantum physicists have learned, intention and desire over matter.

Dr. Cunningham: A brief rejoinder. Dr. Siegel is quite right in pointing to the fact that very few people at the moment are motivated to do this. I'm hopeful about it though. With the presentation of more research, more doctors will get interested. It's Dr. Rowland's point, it needs to be integrated into medical treatment and to become accepted before the majority of people are going to do very much. But that time is coming.

David Spiegel has a nice quote on this. His idea is that given the data that he's produced and others have produced, there needs to come a time, in fact today, when doctors say, "I'm really sorry to tell you that you have cancer. Your surgery is next week. Your chemo is the following week, and your group starts the following Wednesday." Then people would take it seriously. It relates to what Jeanne was saying about the ethical issue of not providing these therapies the way you would provide chemotherapy, surgery, radiation. Then people will take it for granted.

I have a great question that someone wrote. Have you found that patients doing mind-body practices faithfully often feel betrayed by their bodies if cancer recurs? This is a critical question. How might that reaction be addressed ahead of time?

Dr. Achterberg: This is one of the biggest criticisms of this work, and it always has been. It was the reason it was put on the quack list, or the black list, for the American Cancer Society in the 1980's. If we promise things to patients that we know we can't deliver, whether we're doing it as a therapist or in self-help books or anything else, including 100% cure rate or whatever, this is apt to come up. If we're very honest, if we stick very close to the database, very close to our clinical observations and say, "I really don't know all the answers. No one else does. We don't know what will happen, but together we can do the best that we can with this situation." That needs to be said from the beginning. It's an issue of promising beyond what we know we can deliver in this field.

Participant: That was a very good point though. If you take it from a learned level, you are not promising anything.

Mr. Dreher: One analogy that I've used a couple of times is that here's a pill. This pill we know will improve your quality of life. It's nontoxic and there's some evidence to suggest that perhaps it may enhance your chance of survival to some extent. That needs more study. Do you want to take the pill? I think so.

Participant: And in the process, asking, what you think you're learning? Take it to another dimension.

Mr. Dreher: Yes. Does anyone want to comment on that? Well taken point. Did everyone hear that, the distinction between curing and healing being the key distinction – not to

make promises to cure but to talk about healing which is a different but overlapping phenomenon. Anyone else?

These things are not so hard to tell patients. A reasonable doctor trained in maybe 15 minutes could figure out how to tell a patient this in such a way that they would be literally protected against self-blame for weeks, months, or years, or however long they go through a process of trying to help themselves with psychological support and intervention. It doesn't seem all that complicated. If it's presented in this way, it would be the rare individual who might have a serious psychological difficulty who would not be able to transcend the self-blame.

Participant: The problem is with the medical communication lines. I'm working on a curriculum for medical students. There's a whole area of study of what you do if A is not responding to B and what you're talking about is true. There's a communication problem.

Mr. Dreher: That's a big problem. Does anyone want to address that?

Dr. Rowland: Maybe a comment to the side of that. One concern gets back to the issue of the ethical demands we make of the medical practitioner that he or she make appropriate referrals. One of the critical hurdles is we don't train them in this. It is not on their oncology boards. We can lobby for it to be part of medical education that they must be able to recognize, refer, treat some of these or know what's available in the community.

It also hearkens back to the point that was raised by the audience and reflected in the panel. We need to make sure that our medical professionals are in the process of healing themselves. One of the things that I see in my institution is almost a competitive look when the

listings go up about support groups for cancer patients. The staff come and say, when do we get our stress group? And they only say it half-jestingly. What you don't want to do is have them competing for services with the patients for whom we're trying to provide these as well.

And the final point, I want to reiterate again the narrow edge that we're walking on here with the demand that these therapies produce cure. Alastair says that he's concerned that unless we show that they alter survival or recurrence, that they won't be taken seriously. A concern that I have as a researcher is that we set that standard as something that may not be appropriate. It doesn't mean we shouldn't try to do that; but, if that is the only standard by which we're going to measure success, we may back ourselves quite seriously into a corner.

Mr. Dreher: It's a very well taken point. Yes, Ellen.

Ms. Levine: I just want to add that our program actually is a comprehensive program. It's within the Breast Center of UCSF and California Pacific Medical Center. The doctor sees the person and says, "I'm sorry you have cancer. We're going to do the surgery, and on your way out this is the psychologist that wants to talk to you for a little bit and tell you what's out there in the community." We've also just gotten funded at California Pacific Medical Center for a training program for medical students in spirituality.

Mr. Dreher: We don't have any of that in New York, by the way. This is a real problem.

Dr. Esty: The lack of education in the medical curriculum in this area has already been pointed out. Jim Gordon has been for some time running support groups for medical students at

Georgetown. I filled in for him one night. I asked my cancer group, “What would you like to tell these doctors if you could go with me?” They had several messages. The primary one was touch us. Touch us. He has been working with the communication between patient and doctor. A lot of physicians aren’t sure. First of all, since it’s not taught, they don’t get told about these things. What needs to come across is there’s enormous benefit for them, as people and as practitioners, that would enable them to make better choices for their patients as whole people and not just a particular diagnosis who walks in and sits down.

Mr. Dreher: There’s a really interesting question here. I just want to read this and see who wants to pick up on it. It’s really for Dr. Cunningham, but anyone else should also be able to answer it. This morning it was suggested that denial may have a protective function. You talked about “lack of defendedness.” Are these in opposition?

Dr. Cunningham: That’s a construct that we’ve developed from our qualitative analysis. It means openness, flexibility. It encompasses full awareness and facing straight on what’s happening, but being willing to make adjustments to change. It’s the opposite of the old idea of resistance, really. It’s quite different from denial.

Panelist: But here we’re talking about individual differences again. It may be that for the individual who’s denying it, this is their coping mechanism that allows them to get through a particular phase of treatment. One of the things we’re not very good at when we do this research is we group people. We don’t look at change over time. We come in and we do a little quick snapshot of what’s going on. Sometimes these are presented out of context. If we do some of

the research that Dr. Cunningham was talking about – looking at people over time, that healing path – we’ll see that different kinds of mechanisms work better at different points across the course of care.

We’ve seen this certainly in the coronary data where the guys have come on the unit with their coronary arrest, or their attack. They get admitted to the unit. The men who deny the illness say, “I’m going to be back at work. Don’t worry about it, bring my office in here. I can do fine.” They are actually the men who make it out of the unit, as opposed to the men who feel, “This is catastrophic, I’m dying, my father died at an early age, this is it, it’s curtains for me,” who have a higher mortality rate in unit.

However, those men who continue to deny after they’re released and go home, do more poorly in their risk for depression and having a second event. We see there may be different times in which we want to modify that. If they continue to deny after they’re finished with their in-hospital experience, that may be very maladaptive for them in the long term. We need to think of this as a shifting kind of a thing. What works now may not work later. Being able to be flexible, to change what’s not working, is also important.

Mr. Dreher: This whole issue of sensitivity of measures, of repeated measures, and looking at individual differences in coping, are all key points.

Panelist: I’ve wrestled with the results of those studies for a long time. They’ve been around for a long time, the denial studies, showing that denial was actually a protective mechanism for cancer patients. But, what clinically I’ve observed is that there are very different types of denial. One of the denial types is, “I don’t have cancer.” That doesn’t seem to work too

well. The kind of denial that seems to be effective and healing even is, “I know I’ve got a very bad disease, and I don’t have to die from it. I don’t have to have symptoms from chemotherapy.” That’s called denial, but I’m not sure that it is. It’s stubbornness. It’s a lot of other things. It can also lend to the healing path of a patient. When we’re thinking about individual differences, let’s think about what we really mean by denial, and what is being denied? Is it the death sentence?

Mr. Dreher: That’s exactly right. I met with the person in London once who did that research. He did the fighting spirit, denial, stoic acceptance and helpless, hopeless. He looked at his data over and over. He looked at the patients who came in the denial category, and he decided he had to rename it. He renamed it positive avoidance. These were people, he told me (he knew the people), who said, “Yeah, I’ve got cancer, but I don’t want to talk about it. I don’t want to think about it. I’ve got too damned much to do in my life. I’m going to get on with it.”

These were very different from the stoics, who didn’t want to discuss it. They said, “I don’t have cancer, I don’t want to talk about it.” And that was the end of that. There’s a really fine but important difference between the stoics, who did quite poorly in terms of survival, and the deniers, who he now calls positive avoiders.

Dr. Rowland: There’s going to be follow-up data on that. They’ve replicated some of that using their mental attitudes towards cancer scale. I talked to Maggie Watson about a month ago. I’m not sure the data is going to be what we expect, so keep your eyes peeled.

Mr. Dreher: You can’t give us a little hint?

Dr. Rowland: No.

Mr. Dreher: Any other questions?

Participant: Just the converse of that. In a spirituality workshop that I've been doing, a person has responded, "I have cancer, but cancer doesn't have me."

Mr. Dreher: That's great. I have cancer. Cancer doesn't have me.

Panelist: What I found in practice was the positive avoiders, about six months later, realized they could die. They got to work to try to avoid that, so they didn't keep on like the cardiac patients....

Mr. Dreher: It wasn't static. In other words, the positive avoiders may have become fighters down the line. Interesting point.

Panelist: When you're making all the decisions about I need an operation, chemotherapy, etc., you want to deny something to be able to just focus on what you've got to do.

Mr. Dreher: Right. But respect for unique coping mechanisms is very important. People in the psychosocial field will tell you that. That's again why these measures have to be so sensitive and so individualized and be able to pick up that.

Any other questions? For those of you who may not have heard, the question was that she does not feel at all empowered in the medical system as a patient with cancer, and what is to be done about that?

Dr. Esty: I don't know what your experience has been, but I think you need to find some people who make you feel empowered, because there are a lot of them out there.

Dr. Rowland: We're all sitting up here feeling very uncomfortable. Each of us who have been providers here who hear that have all been in a position where we said, "You need to fire your oncologist and find somebody who is sympathetic to your care." These are very difficult decisions to make, particularly if you feel that person was there at a critical point in your care and well-being. It isn't a decision anybody would encourage you to take lightly. Sometimes that is what's called for, but not always. And the other is looking at yourself and saying, "Why do I feel disempowered, or not empowered? What is it? Is it the way this interaction is going? Do I not have enough support around me? Is there some other way I can garner this?" To answer your question on a larger time frame I have to tell you that empowerment, that the survivors movement has been dramatic – we're all here in part because of that groundswell.

The monies that have been directed – the advocacy for the Office of Alternative Medicine, the development of the National Coalition, the Department of Defense money, the funding for breast cancer research in this country – the largest funder is the Department of Defense. Why? Because women got up and said, "We have an epidemic and we need money to do this." That's advocacy, and it's going to have dramatic effects. As consumers we all have a critical role to play in that. You heard it this morning. Senator Harkin says if you have advice

for me that I need when I'm going to be interviewing this new candidate for the FDA, you tell me about it. That's a very honest appeal to all of us to say what we want a person in that central position to take with regard to these kinds of therapies.

Dr. Esty: Let me just come back to this on a very personal level. I was just suddenly reminded of what one of my patients did who was treated in a very callous way, which I have the feeling you have been, or feel you have been. She just didn't know what to do. She was with an HMO. We sat down and said, "What can you do?" At my suggestion she wrote a letter about what her clinical status was, what she wanted in a physician, what she was like, and what kind of a partnership she wanted. She sent it to 35 doctors, and said if you're interested in me, please write back. She found a great physician.

Mr. Dreher: I just wanted to get somebody in the back.

Participant: It's all well and good to say fire your oncologist, but when you're in stage IV cancer you don't go around looking for an oncologist. I was very fortunate because I happened to be in a Georgetown group and I could fire my oncologist, and find another one.

Mr. Dreher: It is one of the toughest things. When you're in a crisis, it's not so easy to fire your oncologist. You've just been diagnosed, you're in a state of sometimes confusion, sometimes not, but always fear and anxiety. It's difficult to break the separation with someone, and how do you go start looking? That's where maybe some of these supportive interventions are so wonderful. People frequently use these psychosocial interventions to make changes in

their medical treatment. They get the strength to develop some of the assertiveness skills and the sense of entitlement to enable them to make a difficult change at a difficult time.

Dr. Cunningham: One sentence to the lady in question. I know it's really hard when the people who are treating you are not helpful, but people only have the power over us that we give them. It's worth pondering.

Dr. Esty: I had a client who did this very effectively – because one of my mentors had done this with his patients out in Ohio. Go in with your list of questions. The physician usually gets ready to leave the room, and you feel abandoned. Instead, you stand in the door and say, “I'm not done yet.” You block the entrance, or the exit in this case, and say, “I'm not done yet. I have more questions.”

Dr. Siegel: I would add that, number one, medical education is still the problem. In terms of empowerment, you have to become a person. You can show up with a lawyer (this is a true story) at your HMO. Say, “You are not taking good care of me. I'm going to another oncologist, and the plan will continue to pay my bills.” You walk out and leave your lawyer there, and it works. You may have to do that.

The other is humor him. When he's having his birthday, give him a birthday card, a humorous card. He will appreciate it. So it's also becoming a person.

We are taught to treat a diagnosis, not a human being. It's important to get across the point that you're treating me. I'm a human being having an experience. It can be acting crazily, it could be dressing crazily, it could be locking the door and saying, “You've got to hug me.” If

it's hopeless, yes, then you may have to find another physician. But how much energy do you have, including writing the letters and making phone calls, and saying, "I'm a human being and I need your help, and I'm not a statistic."

I tell people literally to take to the hospital "Siegel care" – food, a noisemaker, a water gun and a magic marker. You become apparent then. If you show up in the operating room with a note on your left wrist that says, "Not this one, stupid," they remember you.

How many of you would want to be an oncologist for two years? Okay. So understand our pain. We're suffering post traumatic stress disorder. We don't know what the hell to do with all you people who are going to die, and so we're in pain. If you show you're a survivor, and give us a hug, we feel better. We're glad to see you the next time, to begin to talk to you.

Mr. Dreher: On that glorious last note, we'll end this wonderful session. I want to thank everyone who participated on the panel and everyone in the audience with great questions. Thank you very, very much.