

EIR Science & Technology

'Love truth and endeavor to find it and communicate it'

Warren J. Hamerman describes the commitment to the idea of truth and truth-seeking that was the bedrock of the Fusion Energy Foundation's inception fifteen years ago.

On Dec. 7, 1989, former staff and founding members of the Fusion Energy Foundation held a press conference in Washington, D.C. to announce the reversal of the government's illegal bankruptcy action against FEF by Bankruptcy Court Judge Martin Bostetter on Oct. 25. The press conference was followed by a 15th birthday celebration for the foundation, at which FEF founding member Warren Hamerman presented the following address and tribute to another founding member, Dr. Robert Moon, who died Nov. 1, 1989.

I have never had an assignment or have been asked to do something that has made me happier than being asked—honored—to say a few words about where the Fusion Energy Foundation has been, where it came from and where it is going.

It was only a little over five years from the time that man landed on the Moon in July 1969 until the founding of the Fusion Energy Foundation Nov. 23, 1974, about 15 years ago. But there was a real gap, a chasm, in between those two events in the United States and the world.

The first thing I want to talk about is an extraordinary little meeting which happened just before the first Fusion founding meeting at the Tudor Hotel in 1974. This was really the first time I ever met Dr. Robert Moon. It was at a little discussion at the house of Lyndon LaRouche in an apartment, I think, on 168th Street on the Upper West Side [of Manhattan]. It was sometime before, but relatively near the Fusion Energy Foundation founding meeting at the Tudor Hotel.

What I remember is Dr. Moon sitting there and thinking to myself that this was Benjamin Franklin, I have had the

opportunity to meet Benjamin Franklin! One thing I remember is that the discussion took the course of Dr. Moon talking about the atom from the inside. Lyndon LaRouche smokes a pipe, and he had a big ashtray. I can vividly picture, as clear as yesterday, Bob Moon taking that ashtray and deeming it "the nucleus," and then his arms waved around this whole table representing the orbits of the electrons. And he had an immense wingspan. When Dr. Moon talked, he showed off his wingspan. You always admire a man that doesn't sit there in a straitjacket and so forth. And he put out this wingspan which were the electrons going around. And then he started to talk about Ampère's experiments. However, nobody understood what Ampère was actually about. And one thing led to another and he was discoursing on everything from the Manhattan Project to Ampère, to currents, to forces, to the various possibilities of different combinations of atoms to undergo fusion and so forth. . . .

When you are sitting around him, you were there, you were in the middle of an atom exploring how it worked. You forgot that you were sitting in a room. You forgot that you were having a discussion. You forgot that you were having some type of scientific presentation.

And I remember Lyndon LaRouche throwing out a few things: How is the atom's geometry constructed? But does the electron exist? What do you mean forces? And a lot of those questions are the same provocative questions which have been on the table at fusion discussions for 15 years, and will go on for 15 centuries from now in the immortal way of seeking for truth.

I remember Dr. Moon responding to this, and really, that



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Fusion Energy Foundation founding member Dr. Robert Moon helping children at a summer camp construct a basic experiment in electromagnetism.

discussion and what he was talking about was “what is fusion energy?” And here we are today, we can now walk outside, and there are mass magazines covering cold fusion. We’ve lived through the popularization of the idea of fusion energy. People in the street know the word. Fifteen years ago, outside a subsection of the scientific community, the word fusion energy was not very well known.

Why was the Fusion Energy Foundation put together? To confront energy? Was it meant to deal with an energy crisis? Well yes, that’s true. Was it meant to deal with a biology crisis? Well, that’s true as well. Or the threat to the ecology, biosphere, and so on? Of course, that was all correct on a superficial level, but that was not really why the foundation was formed.

How do you make a Renaissance?

In thinking back on the founding meeting, which took place the day before Thanksgiving 1974 on Nov. 23, there was a not-so-hidden agenda—how to spark off a renaissance of scientific creativity, how to advance the frontiers of human knowledge. It was quite a Thanksgiving gift to the world at the Tudor Hotel. I remember at the time we were all talking about how appropriate that hotel’s name was because we were talking about part of our roots as being in the Tudor Renaissance in England, as part of our roots as being with

Kepler, and so forth. About 40 people were at the founding meeting.

Yes, you had this energy crisis and you had this other crisis, science crisis, but really you had a human creativity crisis. And what that founding meeting, and what the Fusion Energy Foundation has been all about ever since, has been the sparking off of a process of creative scientific inquiry, particularly seeking out the areas where there were no clear-cut answers.

When Carol White [former editor-in-chief of *Fusion* magazine] asked me to say a few words at this event, I thought about it for five seconds, and then this big smile came across my face. I pulled out every old *Fusion* and everything I could possibly look through. One of the things I found was the very first *Fusion Energy Foundation Newsletter*. This was before *Fusion* became a glossy magazine. This is Vol. 1, No. 1, January 1975, 50¢. It opens with saying: A matter of necessity, that’s what we are.

“The creation of a crash program for the development of fusion power is not merely a nice idea, it is an absolute necessity if the human race is to survive the next quarter-century.”

So that was 15 years ago. We were projecting into ten years more from now. The next sentence read:

“The alternative to the development and implementation

of a fusion-based economy, on a worldwide basis, within the next decade, is an ecological and a biological holocaust that will decimate the world's population within the next 20 years."

And that was the opening paragraph in the very first *Newsletter*. The issue also contained things about a new scientific era beginning and so forth. And then what's in the first *Newsletter*? Most exciting is a transcript of a discussion which took place at the FEF founding meeting, a little dialogue which took place between Dr. Moon, Winston Bostick, who is here today, Lyndon LaRouche, and a representative from the AEC, the Atomic Energy Commission, a Mr. Rice.

This was an all-day affair at the Tudor Hotel. Everyone of us who was there has our reminiscences about that. There were formal speeches. Chuck Stevens gave a report on fusion energy, what the prospects were. Lyndon LaRouche made some remarks about the threat to mankind and the need for science for solving them. I said a few words on the Ecological Holocaust Study, which was then being completed. Dr. Moon said a few words, and so forth.

But this discussion we published in the first issue of the *Newsletter*, I think is really what the Fusion Energy Foundation is about. We should reprint it and everyone should read it. It goes like this:

Lyndon LaRouche begins by saying: What's our scientific problem, what's our problem for society? It's not a technical problem, it's one of human survival. He says there is no such thing as an absolute timetable for science. We need a crash program around fusion energy and other areas, not only because these are the practical solutions for economic crisis for mankind, but unless we revive the spirit of science, our people are dead, dead fish, our society will have no solutions; we have to revive the creative spirit in the general population. He talked about the need for a crash program.

As the transcript says—you may dispute it or not, but we have the transcript—Winston Bostick then raised the problem which became the subject of this entire dialogue: That's true, Winston said, but when you bureaucratize science you kill it. And if you go with a crash program, the problem is that crash programs generate bureaucracies. Our big problem in science is the heavy-handed nature of government involvement in scientific programs. And that you know, and every other scientist there knew that you get an interference with creative minds.

Then there is a long beautiful discussion of Dr. Moon, where he says you can have creativity in a science program, as long as scientists fight for it. And he told one story about the Manhattan Project. I have heard him tell it since. It's printed in this transcript and I just think it is the best story about Dr. Moon and the Manhattan Project.

It tells the story about General Groves, who was the

military man running the Manhattan Project program; who in the interest of national security issued an order that the heads of each of the labs were not allowed to talk to the other physicists, because he didn't want information horizontally, because something could leak and national security would have been destroyed. And Groves, apparently, as Dr. Moon told the tale, General Groves issued military orders posting them on bulletin boards and so forth that these free-thinking, independent, creative scientists were supposed to then work in their monastic cells. So, Dr. Moon, with great smiles, described "the strike." Nobody did any work, and scientists were saying, "We can't possibly get anything accomplished unless we *share ideas*." And they backed this general down, and he had to change. From that moment, the spirit of the Manhattan Project shifted to a process of sharing ideas back and forth. And we changed it. The Manhattan Project approach to science can work as long as the scientists are directing it *fight* for that standpoint.

It is always good at a founding meeting to have somebody there as a foil. The foil at that meeting was the AEC representative, Mr. Rice, who at that point discourses in little interchanges saying, "You are wrong. You are saying that the problem is society and government interference. It's not the problem, the problem is the irresponsibility of scientists who are not thrifty, waste government funds, waste government grants."

I see Winston Bostick is really laughing now. He must remember this guy Rice, who was a perfect guy to have at a founding meeting. One phrase from the transcript of Mr. Rice tells it all. He pompously invoked "the irresponsibility of scientists who waste taxpayers' money on fruitless endeavors."

We could not have asked for something better to be at our founding meeting. Lyndon LaRouche then responded, saying, you are absolutely wrong. The creativity of a truly creative individual must be respected at all costs, and only a society which respects and trusts the creative individual in pursuit of truth is one that can survive. Then there is a lot of discussion back and forth. Yes, a crash program approach could work as long as it is not unilinear, as long as it is multifarious, as long as it is across different disciplines, as long as it is not just on one track, as long as it fosters a lot of small-hypotheses-chasing by a lot of independent groups, as opposed to a single-track approach with all of the money on one idea or another.

That's how I remember the founding meeting and what it actually sparked off. Immediately, there was so much energy coming out of that room. And since science is not something just for a small room if it is actually going to work—this energy was taken out to schools, to streets, reports on the meeting. The whole transcript of this Socratic dialogue with three Socrateses in the middle of it, back and forth on how could we revive science, what would be its role, was taken

out. And that idea took off.

There was a great need for this in our society—in all societies, but particularly then, coming out of this barren cultural desert, with the stupidity of the Nixon years, and its emptiness, the character of the United States. We had, going into the late 1960s the Apollo Program and other things, and then there's just a gap.

The idea takes off

That was the process of initial formation. Then followed proliferation—the schools, factories, streets, airports. If you wanted to have a good scientific discussion, if you wanted to debate science and know what was going on, in the United States in the late 1970s and 1980s, there was only one place to go. You had to go to the airport! And there you would find a booth of the Fusion Energy Foundation with initially just these 50¢ newsletters. I think by the second volume, they became fancy and the cover was single color, purple usually. I don't know how that lavender color got picked out. . . . But it seems like this single color, lavender on the cover, didn't stop the impact. Why? Because here was tremendously exciting intellectual substance at the scientific frontiers—talk about the universe, why the Second Law of Thermodynamics doesn't apply to living systems, or any type of growth and other things like that.

By early 1975, there was the *Newsletter* and then the *International Journal of Fusion Energy (IJFE)*, which was founded to wake up the labs and researchers around the world with some top-notch theoretical discussion. And we had conferences galore.

The method which began to take hold is that if you could just get these ideas into discussion when anyone had to travel anywhere in the U.S. through an airport, if you were there, then you had a key role of giving them information, what they are going to present somewhere else. Scientists, government people, ordinary citizens travel a lot. (This was before deregulation. You were not taking your life into your hands when you got on an airplane.) So the ideas just proliferated.

Yes, fusion energy, an energy source from the way the sun is powered, from water. And this was at a time, in contrast, when the media was completely taken over by “no energy,” “no growth” type of process. There was a complete vacuum in American society of people who had been raised during the Apollo Program and excited by it. I have a lot of criticisms with the war on cancer, but it did excite a national effort during the same period of the late 1960s of biological breakthrough.

There were a lot of people, most Americans, who had been walking around for a whole decade excited about a scientific goal. All of a sudden, they had that taken away and who could they talk to? Whom could they talk through? Whom could they work through? It was the Fusion Energy Foundation, its magazine, and its conferences.

It seemed in that period from 1974 to 1977 that anything we decided to do worked beyond our wildest expectations. This was not because we were organizational geniuses; in fact, it was just the opposite. There were very few skills organization-wise. It was just that the ideas propelled people into motion, and all sorts of things got solved.

An example of something that worked beyond anyone's wildest imagination was that in 1977 we decided to form a biological sciences division of the Fusion Energy Foundation, even though, as Dr. Ben Sonnenblick, a radiation biologist and one of the four founding scientific advisers, had shown from the beginning of the FEF, biology was integral, and we did not have different departments. We decided formally to pose the question of nonlinearity in the biological sciences and present the idea of the plasma, the fusion plasma, from a geometric standpoint as having very similar features to the protoplasm, so to speak, of biology, the biological domain. Here was the basis for an indisputable refutation of the Second Law of Thermodynamics.

The founding conference of the biological sciences division was on May 14, 1977 at Columbia University with more than 200 people there. The heads of labs from medical and biological research units up and down the East Coast—Hahnemann and Temple [universities] from Philadelphia, National Institutes of Health (NIH), Walter Reed, Howard University, Albert Einstein, Sinai, Hunter. We had the leaders of biophysical research from California, an associate on brain research from a basic biophysics standpoint.

At this conference we talked about Riemann, we talked about Cantor, we talked about Louis Pasteur, as being the basis of this geometric approach to living processes. We unveiled the overlooked importance of Louis Pasteur's work on biology's nonlinear geometric dissymmetry.

Breakthroughs in nuclear magnetic resonance

There was one feature of this conference, which does not only speak to biology, but in general as to what the Fusion Energy Foundation was about. We heard a beautiful talk on the highly ordered cytoplasmic interaction by Larry Minkoff, who was from the Damadian research team of the Downstate Medical College of Brooklyn. This was the team that developed nuclear magnetic resonance, NMR. During that period—we are talking about the mid-1970s—NMR, nuclear magnetic resonance, was viewed as a pariah technology. It was denounced as much as Winston Bostick's pinch effect [a nonlinear effect in plasmas] had been earlier. It was denounced by the government in-house scientists, administrators, and technocrats as being scientifically unfeasible. There were Office of Technology Assessment and NIH reports coming out that NMR would not work, that it was a hoax, physics-wise it could never work, the science was wrong, etc.

And here we had the group around Dr. Damadian in

Brooklyn fighting just to “do science” while under full-scale attack. Their grants had been cut by the NIH. Their grants had been cut by the federal government. And they came and presented their work to this conference, at a time they were under total attack, slandered even in scientific journals, general popular journals, etc. They presented the straightforward idea that the cell, the living cell, is not a bag of water with junk floating around in it. It is a highly ordered process, which is self-ordering, like a plasma. And they responded very much to the idea of this intersection—that’s really what the Fusion Energy Foundation is always about is the interstices between different departments. The areas where everyone thinks there is nothing there, are the most interesting areas. Where physics and biology cross, where mathematics and economics cross, where astrophysics and geometry cross—these are the areas which are interesting to explore.

The FEF championed NMR. The first issue—in July-August 1977—the very first issue of *Fusion* magazine when it went to being a monthly magazine from a newsletter—published on the cover an NMR graphic of a surgically embedded tumor in the chest wall of a live mouse. This was the first color graphic presentation using an NMR image from Downstate in Brooklyn of a tumor in the mouse’s body. This was done by the Damadian group, and it was the cover story of the first issue of the magazine; we were making the statement that this was good science at a time when the NIH was trying shut the Damadian group down, destroy them.

To this day, *Fusion* is remembered by many a biophysicist as that feisty little group which “gave a voice” to the defense of NMR when no one else would.

Of course, there followed a rich history of other developments since that time. Many of those events have been chronicled elsewhere.

Reagan’s belief in magic

I wish to share with you one additional story—Steve Dean’s prophetic Italian lunch—which I think about quite often because Steve was dead right and I was dead wrong at that meeting. [Stephen Dean is a former director of the Department of Energy’s magnetic fusion energy program.—ed.] It occurred at a little Italian restaurant not far from here, shortly after Jimmy Carter was defeated by Ronald Reagan. We had succeeded, of course, in passing [former Washington Congressman] Mike McCormick’s fusion power legislation in the last part of the Carter administration. Steve Dean, Marsha Freeman [*Fusion* magazine Washington editor], and I had lunch. I remember being enthusiastic about what lay ahead since “No Energy” Carter was on his way out. Steve Dean, one of the nation’s fusion energy experts, threw a wet blanket on the meal by insisting that the situation for fusion energy and other areas of real science was going to be a disaster under Reagan. He was stubborn as a mule in arguing that, sure, Reagan would go with all sorts of military “applications,”

but that Reagan distrusted science, underneath, and had an anti-science belief in magic. I can’t remember if he actually predicted that astrologers would control the White House, but he sure implied it. His theme was that Reagan and Bush would not commit themselves to advancing scientific ideas, and that we would have a greater fight on our hands under them than even under Carter. That fight, of course, led to the Reagan administration shutting down the FEF itself lock, stock, and barrel seven years after that lunch.

However, no matter what the government believes, no autocratic decree can shut down scientific discussion when some free minds are determined to have it. The Fusion Energy Foundation has developed a reputation for that. Among biologists and physicists who remember that time and that only one institution which fought for science—from NMR to plasma fusion to Mars colonization. There was a time in the United States when there was only one institution that was fighting for small projects, plasma energy, exploratory devices, and that was the Fusion Energy Foundation. There was only one group which fought to revive Riemann and Cantor, Kepler, Leonardo, and Pasteur—and that was the Fusion Energy Foundation.

Exploring the universe, advancing the frontiers of knowledge, and fighting for the truth—that’s what this organization was all about. There are precedents for such an endeavor—Plato’s Academy, the Italian Renaissance, Leibniz’s Academies, and most, familiarly, Ben Franklin’s Junto.

I would like to conclude by reading Benjamin Franklin’s own words describing the purpose of his Junto because I think that Dr. Moon and Lyndon LaRouche, were they here with us today, would agree that they beautifully comprise the best description of what the Fusion Energy Foundation has always strived to be. Franklin composed these words in 1724 as “Rules for a Club Established for Mutual Improvement”:

Previous Question, To Be Answered At Every Meeting: “Have you read over these queries this morning in order to consider what you might have to offer the Junto touching any one of them?” viz. 1. Have you met anything in the author you last read, remarkable, or suitable to be communicated to the Junto? particularly in history, morality, poetry, physic, travels, mechanic arts, or other parts of knowledge. . . . Any person to be qualified [as a member], to stand up, and lay his hand upon his breast, and be asked these questions, viz. 1. Have you any particular disrespect to any present members? Answer. I have not. 2. Do you sincerely declare, that you love mankind in general, of what profession or religion soever? Answer. I do. 3. Do you think any person ought to be harmed in his body, name or goods, for mere speculative opinions, or his external way of worship? Answer. No. 4. Do you love truth for truth’s sake, and will you endeavor impartially to find and receive it yourself, and communicate it to others? Answer. Yes.