its military and bureaucratic overseers, Moon stated, "There is an inter-personal method of knowing which comes about when people get together and share ideas.New ideas pop up which are beyond anything that anyone...thought might happen."

Prior to this exchange, Labor Committee fusion expert Chuck Stevens had outlined the general parameter of a brute force fusion development program. Stevens demonstrated that only fusion power would be an actual source of new "net" energy. A fusion power plant, would produce two times as much energy in its first year of operation as all the energy that had been put into its production. In fission, fossil fuel or solar energy production no such net increase in energy production could take place. Dismissing the arguments a number of speakers who had proposed solar energy as a less risky alternative to fusion power development, Stevens demonstrated that the most efficient way to use solar energy would be to use fusion power to expand agricultural production and as a by-product enlarge solar energy "capture" through photosynthesis.

The computer print-out sent to the conference by the AEC's Controlled Thermonuclear Research (CTR) division, a Mr. Rice, spoke in defense of the AEC's criminal sabotage of fusion research. Rice whined about irresponsible scientists who were wasting the taxpayers' money on "fruitless endeavors," fulfilling his initial announcement that he would offend the participants' intelligence with his remarks.

Marcus answered Rice countering "that the creative individual must be intrinsically trusted...there must be complete trust for scientific progress to take place."

The basis for the Rockefeller-inspired zero-growth movements is the fear of scientific progress that overcomes decaying bourgeois culture — a moral cancer that could destroy human creativity itself in the interest of saving capitalist control over production." Marcus went on. We should not fear progress or the problems that are its "by-products," as is proposed by these modern day barbarians. These so-called problems merely define the next challenge — challenges which science must solve. (See accompanying box.)

Reaching Outward

The Fusion Energy Foundation (FEF) will immediately begin reaching out to the large numbers of independent scientists who are now at work in isolated pockets or as individuals in the hostile environment of a rotting bourgeois society. These scientists will once again be given the intellectual environment and political support to make the creative advances now required to prevent ecological holocaust and human destruction over the next decade.

The FEF will be developing and disseminating the most comprehensive assessments about current fruitful lines of development of fusion power.

Simultaneously, through the publication of articles in this newspaper and through the circulation of such documents as the forthcoming Fusion issues of the Campaigner, the FEF will keep the working class abreast of the latest developments in fusion technology. This augmentation of intellectual ferment in the working class will in turn lay the basis for a scientific renaissance.

FUSION MEETING DEBATE ON HUMAN CREATIVITY

The following is an edited exchange between Profs. Moon and Bostich, and Lyn Marcus. The exchange clearly outlines the essential subjective features of crash scientific program of the type we are proposing for fusion power development, as such it represents in cameo form the type of creative free "exchange of ideas" the speakers refer to.

LYN MARCUS — Dr. Bostich has hit upon a very significant problem which is an included problem that we have to face, and it's a problem which faces socialists in particular. There's an insufficient recognition of the subjective element in human progress. That we have to focus effectively on giving a great deal of freedom and facilities and resources to individual teams which constitute themselves and deconstitute themselves when their specific purpose is completed.

PROF. MOON — I've just jotted down a few things here that I'd like to bring to your attention. The Manhattan project was born after the discovery of the neutron in '32 and then fission in '38 by Hans Strauss. It put scientists to work all over the world in their little laboratories, verifying the various natures of fission. And then the scientists of their own accord went into secrecy. Well, this was one of the first times it seemed that there might be a possibility to get energy from nuclear reactions.

But what I'd like to say is, the atmosphere, that existed at that time, in the first place we had this self-imposed secrecy and went to work on neutron diffusion — that's what we called it. The main thing was a group of scientists were brought together, they were fed work, there was no question about patents or anything of that sort, they were working for the good of the country.There was no — such as we have experienced since then — there was no long term writing of proposals and writing of reports and so on. The question is: how do you really do research, if there is as crisis on, and you have got to spend a great deal of time writing reports and getting referrees to approve them — particularly if it's a new idea? You didn't have to do this on the Manhattan Project. You just went ahead. This is exactly what happened. Scientists worked, and they worked together. They worked on any idea that came to their minds. No stone was left unturned.

This was one of the great things about the Manhattan Project. And we had information meetings — once or twice a week the scientists got together and discussed all the things that were going on. And there was no self-pride involved at all. We were all reduced to the same level and fighting for the same thing.

If we are ever going to go ahead on fusion, it seems to me something of the order of the Manhattan Project (is needed) in which scientists can come together and work and which funds are given and questions are not asked.

PROF. BOSTICH — Let's remember this when we're talking about crash programs. They are not necessarily an answer to the problem. They have inherent difficulties, inherent poisons built into them. They have the seeds of their own destruction built into them. Also, with the situation in fusion now, there are big centers that have their own programs that are already fairly big. There are these empires and the power brokers of these empires and they aren't going to take kindly to a kind of dismemberment of their empire and a pooling of their resources. I don't know how a crash program is going to come about. I really don't see how to organize it. Maybe somebody else does but it looks difficult to me.

So we have a problem of social development here which I think ought to be integral to our approach. What we have

to do is to be multifarious, but have an overview of what we're doing. We can't say, "well, what is the effective approach; this is our policy; now everybody work within this policy." We've got to get away from that bureaucratic approach to scientific development. It doesn't work, because scientific development always is based upon the individual and small group who activates the creation of a hypothesis and the initial experimental demonstration of the hypothesis which then is ready to be assimilated as a part of general policy. What we need in this case, is we need a crash program — but a crash program, I think. has to be not unilinear. It has to be based on fostering every productive line of experiment. Which means essentially fostering a lot of small hypothesis chasing individual groups based on general experience and competence.

This kind of thing which, while it's indirect in respect to the fusion question itself, is fundamental to getting the kind of progress we want. We must have a social conception of the necessary conditions of scientific achievement as well as the overall funding and general targets which we work for.

Our job is to create a culture in which there is a large proliferation of scientific skills. These skills then have to be given the means to realize their potential. This has to be done in cognate with the raising the cultural level of the entire population, and I think our method of social control is the one by which we are going to be able to achieve these objectives.

Our ability to win this fight for getting back to the idea of progress, away from the idea of zero growth and stagnation proliferated recently, is based on the constituency of the skilled and semi-skilled American worker and his brother in Europe and other parts of the world and the anguish of the underdeveloped countries which need this. And it's to the extent that we make these policies and needs comprehensible to this political constituency which demands that qualified physicists and engineers will be developed, will be given the facilities to realize their potential as individuals and groups to produce the demonstrations of experimental feasibility of hypothesis. We can then — as a source, as a warehouse of ideas — select those demonstrated feasibilities for actual large scale social practice.

But this relationship, I think, must be much more clearly understood. And it is our specific responsibility, particularly from the standpoint of my organization, to deal with that problem. We have to integrate a working concept of how scientific development occurs in society together with the problem of a mass policy of this type. We know from the entire history of the human mind, we know that the mediation of creativity is the creation of hypotheses by individuals often working as individuals or small groups. This demands laboratory and cognate facilities for these individuals and groups be made available with a great deemphasis on saying what are you going to do as a result of getting these facilities. You must be giving considerations along the line Dr. Bostich indicated. We must consider the kinds of sociological problems that come with the furthering of scientific creative development, and we must incorporate these things into our program. The fact that we as an organization are pushing this does not mean, as some might interpret, that we foresee a single policy which everybody gets in line with. Quite the contrary, we have to go through a mediating process which emphasizes individual mental capacity for generating new hypotheses. And it's your responsibility to feed back to us from your experience the empirical knowledge of this sociology.

PROF. MOON — I just want to say another word I forgot to say when I was up here. And this is in line with what both Prof. Bostich and Lyn Marcus have said, namely, on the Manhattan Project there was this great sharing of ideas. This is extremely important, to share ideas, to bring together scientists, they share ideas and they share them freely. They're not thinking about what's in it for me, but rather, what's in it for the country, for the world, in this sharing of ideas. Out of this came new ideas. You find it at the scientific meetings where the scientists gather in little knots in the hallways and discuss problems. Out of this sharing of ideas come new ideas.

I might say that in order to have this sharing we had a little fight when we became the Manhattan Project. General Groves spoke in terms of what Lyn Marcus was talking about, the platoon arrangement. He wanted every scientist to work in his own little cell, not to tell the scientist next to him what he was working on. He thought this was the way to bring about national security. The scientists refused to work. And strangely enough, the scientists brought about a sufficient amount of pressure that General Groves gave in.

And so we had our information meetings, we had the sharing of ideas. We felt that we were the ones that had the knowledge about nuclear energy.

The following is an edited exchange between Mr. Rice, the automaton from the Atomic Energy Commission, and Lyn Marcus.

Marcus answers Rice's charge that scientists cannot be trusted with a description of the world historical identity of the creative scientist.

MR. RICE — I've been in the R&D business for quite a few years. And one of the basic, gut questions always is to what extent you give the contractor a free hand? The answer to that is very complicated, but it involves among other things, trust. It involves the matter of has that contractor shown not that they're not trustworthy, but that they're effective — that they spend their dollar in a very effective way.

LYN MARCUS — This is the area of creativity we are concerned with. Some of you know from personal experience that the creative person, when functioning as a creative person, does not fit the Rousseau social contract view of competitive individuality. The creative individual can be intrinsically trusted when being creative. There must be complete trust and that's the only basis for scientific progress.

The creative person has a completely different motivation than the so-called typical person as conditioned by this society. The creative person is not a person who will cheat society. He is incapable of cheating society as long as he is proceding from a creative identity.

What's the creative person's primary concern every morning? What's the agony of the creative person? The agony from which their identity is located? They know that over a period of time, over the period of their maturation, that they have done things that are original. They have synthesized new gestalts, which have a usefulness for mankind, generally. They know they've demonstrated this capacity. And the greatest fear the creative person has is that one morning he'll wake up and find that that capacity for creativity is gone. The creative person goes through all kinds of agony trying to cultivate and maintain that special quality of creativity for fear that somehow it will be lost.

The creative person knows that anything that involves moral prostitution, particularly in respect to the professional areas in which their identities are associated, will undermine their creative potential. The creative person will often leave a job because they find that their creativity is being stultified by the kind of identity which they are forced to adopt in that environment. Because they can feel, as they would say: "My mind won't last in this environment. I'll become a clod."

So the creative person can be trusted because the creative person's sense of identity in society is intimately associated with real achievement. The history of real achivements, disciplined achievement in scientific work, is the essential immediate superego of the creative

person. He doesn't do things irresponsibly. His past achievements and discipline guide him in determining what he regards as a responsible contribution.

I would suggest that, in general, a creative person in a creative environment, with a creative opportunity, can never cheat, will never propose an activity which is irresponsible.

Our problem is to develop disciplined, creative people. If we produce creative people, the creative person can be intrinsically trusted. The minute we begin to say: "Can we trust creative people; do we have to put checks on them?" we're going to lose. We're going to stultify creativity. We must recognize that the creative person has a different sense of identity than the average person in society is permitted to achieve. And that a creative person can be trusted.

The other aspect of this — and all of us who do creative work know this — know what we will permit and what we will not compromise with. We know that what we've achieved for ourselves in finding a creative identity in society rather than a routine identity is something which is the proper property of every human being. We want a society in which all human beings have a right to realize this creative potential, this sense of identity of being intrinsically trustworthy people who will not cheat society, who will always act in such a way that they know that their existence is something useful to the human race. They will never do anything deliberately to soil that.

Now the principle upon which this achievement rests is the principle of trusting creativity. And our problem is to recognize it where it exists and to cultivate it where it does not yet exist. Under those principles the problem will be solved.

Because you put the scientist in a banalizing environment. You say, "well, we're not interested in science anymore; science has gone too far." You get these kind of Frankenstein ethics coming out: the mad scientist who's guilty of hubris and he's insulted the gods, the gods are going to destroy the environment or something hideous like that.

The basic principles of science are being rejected in our culture. We talk about the ecological problem: we produce a new crop, we have a new parasite — so what! So what! Everytime we change, we advance, we create a potential problem. That problem, in turn, defines the need for the next advance.

The problem should not be looked at as a reason not to undertake the advance, but rather the problems incurred by the advance become the basis for making further advances. They become the problems that define what further advances should be made.

Fusion Power Bill for The U.S. Congress

With the passing of this Bill the Congress of the United States commits itself to the development of nuclear fusion power and the future survival of the human race: To establish a national crash program for research and development of controlled thermonuclear fusion technology and energy production.

Be it enacted by the Senate and the House of Representatives of the United States of America (assembled) in Congress, that this Act may be cited as the "Federal Fusion Energy and Technology Research and Development Act of 1974."

SECTION 1: The Congress hereby finds that:

(a) The immediate development of controlled fusion is of priority concern to the Nation and World.
(b) The major reason for the Nation's past failure to develop controlled fusion has been the lack of an aggressive research and development strategy designed to bring the necessary resources to bear on the problem.
(c) The neglect of potential controlled fusion resources has led to deficiencies in the Nation's array of available material resources.
(d) The Nation's energy and resource requirements can be met if a national commitment is made now to dedicate the necessary financial resources, to enlist our scientific and technological capabilities, and to accord the proper priority to developing controlled fusion to serve national needs, conserve vital resources, and protect the environment.
(e) The urgency of the Nation's and World's resource problems requires a commitment similar to those undertaken in the crash development Manhattan and Apollo projects; it requires that the Nation undertake a long-range, top-priority, research and development program in cooperation with all interested nations of the world.
(f) In order to guarantee the integrity of such a crash development fusion program, Congress will initiate an immediate public inquiry into the possibility that criminal neglect and sabotage are responsible for the failure of the nation to have previously developed controlled fusion. This Congressional investigation will run concurrently with the implementation of the crash development fusion program.

GENERAL POLICY

SECTION 2: The Congress hereby declares as policy:

(a) A National Department for Development of Controlled Fusion will be immediately established to carry out a national crash program of basic and applied research and developemnt, including demonstrations of practical applications, with respect to all applications of controlled fusion.
(b) The Department for Development of Controlled Fusion (DDCF) will be directly responsible to Congress as a whole and will provide monthly public reports on progress of the crash program.
(c) The DDCF shall promptly make all records available for public inspection and copying at reasonable rates.

SECTION 3: The Congress authorizes and directs that, to the fullest extent possible, the Department for Development of Controlled Fusion authorized by this ACT shall design and execute its activities according to the following principles:

(a) All patent and proprietory rights which bear upon controlled fusion or its development or applications will be held in abeyance.
(b) The DDCF will cooperate with all other national and international efforts directed toward development of controlled fusion.

SECTION 4: The Congress further authorizes the Department for Development of Controlled Fusion to:

(a) Review the current status of all research efforts into controlled fusion and furnish a full report to the Congress and the Nation within two months after the enactment of this bill.
(b) Form a committee of the Nation's leading scientists and engineers to review current and projected fusion research efforts and develop a detailed crash program beyond that program outlined herein. This review will be reported to Congress within 6 months of the enactment of this bill.
(c) Obtain under the authority of the Congress all classified scientific information and other materials which relate to the development of controlled fusion (particularly laser and electrical beam fusion) and make this information available to the public.
(d) Implement on an expanded crash basis the Atomic Energy Commission's Subpanel 11 Fusion Crash Program.

(e) Initiate a massive educational aid and development program to supply the necessary physicists, engineers, and scientists for fusion research.
(f) Make provisions to build a materials testing linear theta-pinch reactor within the next 6 months.
(g) Take possession of all existing governmental facilities (and in particular those of the Atomic Energy Commission and Department of Defense) which could contribute to fusion research.
(h) Report all of its activities to the Congress and the Nation on a monthly basis.
(i) Set up a national communications and translation network to transmit scientific data and reports as rapidly as possible.
(j) Establish several national centers which would function in the same capacity as the Los Alamos Laboratory acted for the Manhattan Project. These "nerve centers" of several thousand scientists, engineers and technicians would command and coordinate the rapid development of the necessary industrial base for producing fusion technologies.