

The greening of the American Physical Society

A generation gap among American physicists becomes evident during a winter of discontent

by Dietrick E. Thomsen

"Don't blame me, I voted for Humphrey." So read an anonymous slide put on the projector at the beginning of a session on the employment crisis in physics at the American Physical Society meeting in New York last month.

The physics establishment, the men who have been managing the affairs of the physics community, acknowledges that the field is beset by serious problems.

The employment and funding situation is the most visible. But the troubles of the physics community are to a degree a reflection of broader social and political concerns that affect many segments of a disaffected public grown weary of war, discouraged by continuing social injustice and distrustful of many aspects of technology. Among the sciences, physics is perhaps buffeted the most by discordant strains. There are several reasons. Physics is the basis for many of the technocratic developments that now look more and more frightening. Physicists played a large part in bringing the world into an era perpetually under the threat of nuclear devastation. And the field attracts highly independent thinkers, many of whom are now questioning values of the system from within.

The session on employment at the APS meeting recruited three well-established physicists, Drs. Joseph Reynolds of Louisiana State University, Robert H. Dicke of Princeton University and Lee Grodzins of the

Massachusetts Institute of Technology, who reported statistics that sounded like a horror story to a professional group that was used to being in great demand until recently.

In terms of constant dollars, says Dr. Reynolds, the Federal science budget is down 30 percent in four years. The raises promised by President Nixon's proposed budget for fiscal year 1972 (SN: 2/6/71, p. 93) bring expenditures for science just back to the levels of 1968 when counted in the same constant dollars.

There are about 20,000 Ph.D. physicists in the United States. Of these, says Dr. Grodzins, 3,000 were looking for jobs last year—1,500 of them newly graduated. Of those who were looking, 30 percent did not find jobs in which they could use their knowledge of physics. Approximately 1,000 could not find positions in this country, and of these most went abroad looking for work, thus reversing a brain drain of many years standing.

Yet, points out Dr. Grodzins, physicists make up a small portion of Federal expenditures. An extra \$100 million, he contends, could solve the manpower problems, not only of physics but of all science.

To get more support for science, the leaders of the physics community propose going to the people and the politicians with the same arguments and tactics they have used successfully in the past. Voting for politicians who favor expenditures for science, like

Humphrey, is an example. The establishment would justify the pursuit of physics on the traditional grounds: the intellectual one that it is there to be studied and the practical one that it aids technology and national defense.

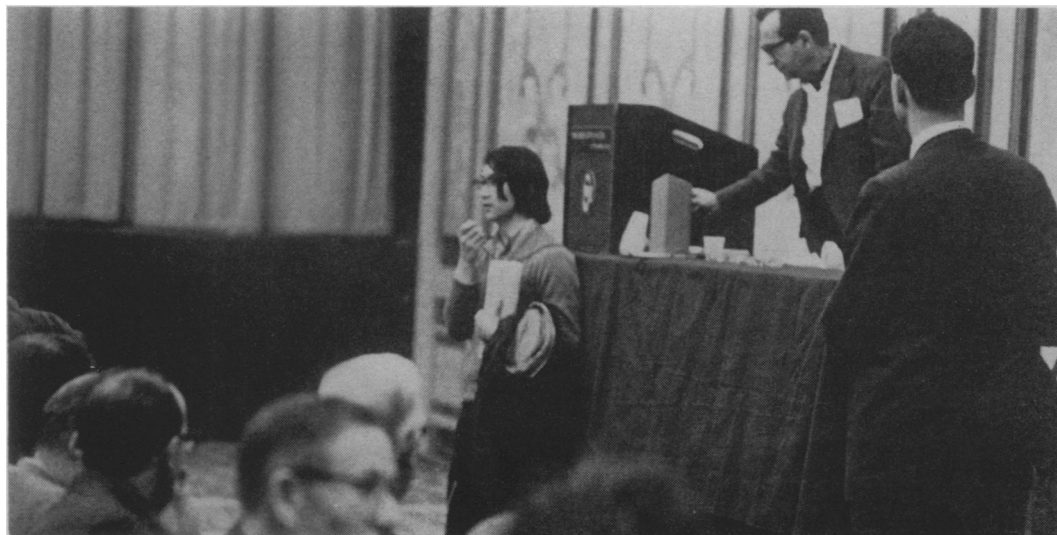
An increasingly vociferous corps of radicals in the physics community scorns this as salesmanship.

One establishment speaker even urged that the Federal Government support the physics community as a kind of national resource to be stockpiled against emergency. He reminded his listeners that during World War II the physics community was mobilized by the Government and developed means for saving the country.

This kind of talk drives the radicals up the wall. To them participation in the making of the atomic bomb is, if not exactly a crime, something to be ashamed of rather than to recall with pride.

Many nonestablishment types feel that the establishment's attitude is hypocritical. To adequately summarize his attitude toward the establishment's expressions of concern and its proposals for remedies, Dr. Charles L. Schwartz of the University of California at Berkeley used a colloquial expression for natural fertilizer.

Dr. Schwartz, a 39-year-old professor of physics, is one of the most active members of Scientists and Engineers for Social and Political Action. SESPA was founded at an APS meeting in New York two years ago and has been a



Radicals inject moral and political questions into technical sessions.

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thorn in the establishment's side ever since. Its members believe that only a radical reconstruction of the behavior and attitudes of physicists can solve the problems of the science.

The radicals talk of going to the people. "Science for the people" is their motto. But they do not wish to justify physics in old-fashioned intellectual terms nor as an adjunct to technology. They are not interested in what Dr. Schwartz calls the "technological crap-out." They want to make physics a part of life, and if at the moment they are not exactly clear how to do that and if their tactics and language seem to some more offensive than persuasive, they are conscious of a deep sense of alienation.

The alienation is expressed by Dr. Brian Schwartz, a 32-year-old MIT theoretical physicist, when he describes physics as a very solitary activity pursued by physicists for their own private pleasure. Reminded that art is also a solitary activity pursued for the artist's satisfaction, he replies that artists do their thing in public, and the public gets some communication from it. Physicists perform only for other physicists. Somehow the tight circle has to be broken.

One step toward science for the people that the radicals are most insistent upon is the development by the physics community of what they call a conscience. To them, Dr. Grodzins' extra \$100 million looks like the price of Naboth's vineyard. "The older generation of physicists have sold their souls to the Defense Department," says Dr. Michael Kaku, also of Berkeley. "Physicists today are good Germans."

Dr. Kaku speaks of an irrevocable split between the older and the younger physicists. The elders, he says, having tenured positions, high salaries and various social perquisites, are concerned to conserve them. The young, in his view, are interested in ethics and morality.

As part of the ethical development, the young insist that the establishment stop doing them wrong. "The older generation encouraged us to get into physics," says Dr. Kaku, "now suddenly there is no money left, and they have washed their hands of us." He claims that the unemployment rate among the youngest physicists goes as high as 90 percent.

As examples of establishment callousness the activists point out that none of the unemployed was invited to discuss the employment problem and no graduate student was on a panel that discussed graduate education.

The radicals have taken their demand for ethical behavior to the officialdom of the APS. They want the society to

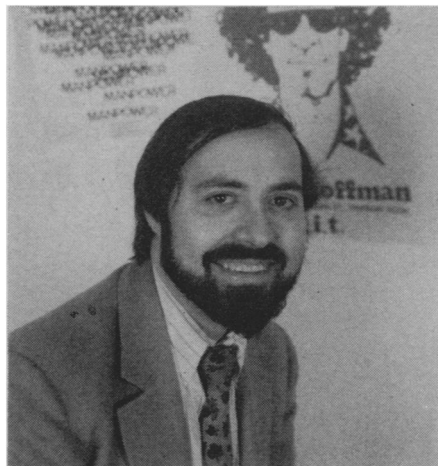
have a code of professional ethics for physicists like the ones medical associations and bar associations have for doctors and lawyers. So far no action one way or the other has been taken on the proposal. Meanwhile, the radicals have been demonstrating their concern.

The Joint Ceremonial Session of the American Physical Society and the American Association of Physics Teachers has traditionally been a polite and relaxed affair. Medals are awarded and certain formal speeches are given.

One such speech is the annual Richtmyer Memorial Lecture of the AAPT. This year's lecturer was Dr. Edwin H. Land, chairman of the board of the Polaroid Corp. Dr. Land's appearance provoked a demonstration that took over the podium.

The demonstrators decried Polaroid for selling cameras to the Republic of South Africa used to make identification pictures for the passbooks used to enforce apartheid. They invited the leader of a group of Polaroid employees who oppose this business to tell about it. Dr. Land's response was to remind the dissidents that the company's South African business was investigated by an interracial committee who advised that it would be better for the black people of South Africa if Polaroid used its influence on its agents there to improve conditions for the blacks. The demonstrators countered that Polaroid's South African agents are forbidden by law to improve the conditions of the blacks.

Both sides rested on their arguments. But the demonstration itself profoundly disturbed many in the audience who thought it had no place at an APS meeting. Hoots, catcalls and cries to call the police were heard. One gentleman was so shocked by the presence of a nonphysicist at the podium that he shouted: "I had to be a member and submit an abstract before they let me speak at this meeting. Throw him off the stage."



Brian Schwartz: No more ivory tower.

Dr. Charles Schwartz tells of an encounter with a young physicist from the Lawrence Radiation Laboratory at Livermore, Calif., a place the radicals view with the same regard in which nuns view a house of ill repute. "I noticed," says Dr. Schwartz, "that his experiment had to do with plutonium." Dr. Schwartz says he asked why the physicist's interest was in plutonium of all elements and whether it had any connection with "the first experiment with plutonium, the one over Nagasaki." The speaker replied that a technical session was not the place to discuss such a question but he would be willing to discuss it further outside. Dr. Schwartz says he asked whether questions of morality had no place in science, and the speaker said they did not.

This is an example, says Dr. Schwartz of the "separation of science from life, which, if allowed to continue, will only end in death."

Yet, in the opinion of the young radicals, this exemplifies the attitude of the older generation of physicists. Compartmentalization is the elders' mental reflex. They separate technical, moral and political questions into separate categories and insist on discussing each in its proper time. The radicals insist that such separations are impossible and that any time is the proper time for discussing anything important. It is an attitude the older generation finds increasingly hard to take.

"Their intentions [the radicals] are good and in some cases I agree with them," says Dr. Robert Serber of Columbia University, president of the APS, "but I do not think the physical society should be a catch-all for all good causes." He expresses a view quite general among the older members of the society that political action is not appropriate business for the APS. They say an organization like the Federation of American Scientists would be a better forum for political activities.

Nevertheless, in response to requests and by an overwhelming vote of its members the APS is setting up an organization called Forum on Science and Society. This will have charge of discussion programs involving political and social topics, and Dr. Serber suggests that the radicals join it and use their influence within it to get their point of view represented.

As for a statement of ethics, Dr. Serber says: "I don't know that the society could agree on one. There are members who believe that one shouldn't cooperate with the Government at all; others would take a more moderate view. I personally would not favor it. We live in a real world and are supported by society. We cannot take extreme positions." □