

Many High-Energy Physicists Seek Stronger Organization

Despite heated opposition from the other disciplines of physics, an independent high-energy physics association is still under consideration. The American Physical Society is setting up a particle-and-fields division that high-energy spokesmen say will answer some but not all of the needs of high-energy physics. Meanwhile many particle physicists are looking to Universities Research Association (the group that has offered to contract the building and operating of the 200-GeV accelerator) to guarantee them an effective voice on a national scale.

For a number of years the high-energy community has felt the need for an organization that would serve as a sounding board and crystallize opinion among accelerator builders and users—a group that would also convey to the public the purposes and value of particle physics. The community, now numbering some 1400 working physicists, spent an estimated \$198.2 million in federal funds during fiscal 1967, or 50% of the entire federal budget for physics. Their spokesmen say that until recently the group did not even have a specific channel of communication within the American Physical Society, and despite formation of the new division, APS (being a scholarly and neither a political nor policy-making organization) cannot solve the kinds of problems involved in high-energy physics. They add that there have also been several study groups, headed by Norman Ramsey (Harvard), Robert Walker (Cal Tech) and others, concerned with future programs in high-energy physics. But “grass roots” physicists do not feel that such committees are representative of them. Only in an atmosphere of consensus among accelerator builders and users, they say, can committee recommendations be transformed into decisions within the federal government. In search of an improved mechanism for obtaining consensus, high-energy physicists began to consider an independent organization.

RESONANCES

Tight federal physics support is anticipated for fiscal 1968 now that the White House has handed down austere agency budgets that Congress may deal with even more severely. AEC physical research funds are up barely \$17 million over last year with appreciable increases only in high-energy and fusion research. High energy received \$116.5 million, including \$1.1 million for Brookhaven, \$1.9 million for the Argonne ZGS, \$1.7 million for the LRL Bevatron and \$4 million for studies of its Omnitron, \$0.4 million for the Cambridge and Penn-Princeton machines, \$0.9 million for Stanford linac, \$10 million for the 200-GeV design study. (The AEC earlier disclosed it had signed a \$0.2 million design contract with URA for the 200-GeV machine.) Fusion research received \$26.2 million, up \$3.6 million, but far less than the Herb panel recommendation. The funds are earmarked for the superconducting LEVITRON and improved ASTRON accelerator, both at Livermore, and the toroidal multipole device at Princeton. These projects are still subject to scientific review. The LASL \$5 million SCYLLAC configuration has already been favorably reviewed but no decision has been made on its funding.

The National Science Foundation budget is \$526 million, up \$46 million from its appropriation last year. The 1968 total includes \$25 million for basic-physics-research projects (up \$1.6 million), \$4.7 million for university physics research facilities (down \$1.1 million) and \$24 million for university computers. NSF also hopes to allocate \$48.2 million for fellowships and traineeships, \$25 million for university science development, \$12 million for departmental science development and \$15 million for college science improvement.

HEPA conceived. In August 1963 Associated Universities, Inc., formed a high-energy-physics study group to try to develop a nationwide scientific viewpoint concerning facilities for graduate education and research in the field and to establish priorities. Many physicists, however, felt that the views represented in the study-group report had a local bias and did not speak for the whole country. Consequently on 19 Sept. 1964, part of the AUI study group invited high-energy physicists from various parts of the country to discuss a national program. Headed by Leon Lederman (Columbia), the group included Robert Adair (Yale), Rodney Cool and Ernest Courant (Brookhaven), Robert Walker, Robert Wilson (Cornell),

Robert Serber (Columbia), David Frisch (MIT), Aihud Pevsner (Johns Hopkins), William Chinowsky and William Wenzel (Berkeley), Myron Good and Keith Symon (Wisconsin), John Tinlot (Rochester), Henry Primakoff (Pennsylvania), George Masek (Washington at Seattle), Sam Treiman (Princeton), Robert Sachs (Argonne), Roger Hildebrand (Chicago) and Robert Sard (Illinois).

No voting took place at the meeting but two mechanisms were proposed: (1) a professional society that would discuss national policy questions and seek consensus and (2) a national corporation of universities with similar objectives. Many who were present at that meeting had misgivings about forming any kind of separate society.



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AN EQUAL OPPORTUNITY EMPLOYER

They feared that such a group would become a political rather than a scientific organization and be looked upon as a lobby by physicists. Others feared that accelerator designers and operators would see in the new organization a device to give experimentalists a stronger hand in controlling accelerator activities.

Despite these misgivings, the group decided to explore the possibility of setting up a professional society. It formed a subcommittee, headed by Sachs, to draft a model constitution for a proposed society for particle research. After the subcommittee had completed its draft and submitted it to the organizing committee for approval, copies of the constitution together with ballots were sent out to the particle-physics community. This community was defined as all those holding tenure positions in institutions carrying on significant work in particle physics.

The proposed constitution named the new group the High Energy Physics Association and gave as its purposes (1) "to provide a means for developing and disseminating informed and responsible opinion concerning national aspects of high-energy physics, and . . . to promote the development of a consensus, (2) to promote cooperation and transfer of information between those active in high-energy physics in the United States . . . (3) to serve the public, the universities, national laboratories and government as a source of responsible information and opinion in the field of high-energy physics (4) to stimulate public interest in high-energy physics."

The constitution also repudiates political action in any form, saying, "No part of the Association's activities shall consist of carrying on propaganda, or lobbying for legislation, or participating in, or intervening in any political campaign on behalf of any candidate for public office." One reason for avoiding the lobbying label was that the organizers of HEPA intended to solicit financial support from the government. They also hoped government agencies would come to HEPA and ask the group to set up studies and make recommendations.

Survey results. When in the spring of 1965 reactions to the constitution had been analysed, the response,

according to Sachs, indicated a lack of enthusiastic support. The HEPA organizing committee felt it did not have a mandate to proceed. Other spokesmen, however, were more optimistic. Of 214 ballots returned, 164 were yes, 48 no and 2 yes and no. A large fraction of the yes votes were accompanied by strong reservations.

Many thought that HEPA would be a lobby and nothing else. "This type of organization cannot avoid being a lobby," wrote one physicist. Others charged that HEPA would aggravate the fragmentation of the physics community. "It would emphasize," said one respondent, "rather than resolve regional conflicts and superimpose yet another committee on the plethora of existing panels." "It will present only additional obstacles in the way of doing physics," wrote a Nobel laureate. And Sam Devons of Columbia wrote, "High-energy physics is hardly some offshoot of physics. . . . Particle physics has been stressed, indeed 'sold,' time and time again as the front line, the main avenue for fundamental progress, the great innovator of all physics. If it is indeed such, then surely it should be possible to engage the interest and enlist the support of the physics community as a whole in urging its vigorous development in the future. . . . The proposed association may do more to alienate such support than to foster it. . . . Perhaps I am old-fashioned in believing that a major element in fostering the future of physics is to make every attempt to preserve its unity."

Particle division in APS. Many respondents to the HEPA ballot had urged that a high-energy division be formed within APS. Already a nuclear physics division was being initiated in APS, in direct reaction, it is said, to the organizing activities of the particle physicists. (During the recent leveling of funds for physics, scientists doing what they consider to be "little physics" have been fearful of competition of high-energy physics and looked with suspicion on such activities as HEPA.)

The APS council had decided the time had come to clarify the place that high-energy physics should take within APS. Accordingly the HEPA organizing committee was asked to delay formation of an independent

group until after the APS council had studied the matter. In October 1965 an APS ad hoc committee met to consider a separate division of high-energy physics. Spokesmen for high-energy physics, however, opposed forming a new high-energy division similar to the existing divisions of APS. They wanted a reorganization of APS with divisions taking greater responsibility and playing a definite role in the society. They therefore recommended formation of a high-energy division provided the society alter its constitution so that (1) each clearly recognized discipline is represented by a division (2) each division is represented on the council (3) each division is responsible for organizing or advising on the presentations for society meetings and topical conferences.

New amendments and bylaws to the APS constitution, recently approved by the membership, substantially incorporated these recommendations. Consequently at the Nashville APS meeting last December, the APS council formally approved a new division of particles and fields within the society. Any APS member may enroll in the division by paying an initiation fee of \$2.

But high-energy physicists point out that the new division can satisfy few of the needs of their community. "The biggest service the division can provide," says Sachs, "is to give us a reliable membership list. I also hope the division will really take over invited papers and symposia on high-energy physics at meetings." "There is only minimal overlap," says Edwin Goldwasser (Illinois), "between the ends that will be achieved by establishment of this new division and the goals that at least some of us had in mind when we began discussing the organization of HEPA. . . . There is still need for something that goes beyond the normal activities of such a division."

URA. Can Universities Research Association satisfy the needs of the high-energy community? URA came into existence (June 1965) some nine months after the first HEPA organizing meeting. Since then, it has undoubtedly dampened some of the enthusiasm for HEPA. It is no secret, however, that many physicists have reservations about the ability of URA

to be spokesman for particle physics.

Among such objections: (1) Scientists at national laboratories are not represented in URA. (2) The high-energy community has not been consulted in any systematic way concerning establishment of URA. (3) Although there will be many scientists on the URA council, there will rarely be a significant number of active high-energy physicists as distinguished from committee-hopping or administrative physicists. (4) Since URA will not concern itself with the affairs of existing laboratories, it will not provide a mechanism for establishing priorities in the overall particle-physics program. (5) To communicate with the community, URA must set up some kind of advisory board or users' group of active scientists. (6) URA does not yet have the contract for the 200-GeV accelerator.

Answering some of these reservations, Norman Ramsey, new president of URA, told *PHYSICS TODAY*, "The URA trustees have to be a small group in order to be a working management group. Not all high-energy physicists can be on it. The scientists in the group are selected from among the 46 major participating universities. In addition, now that the 200-GeV site is selected, URA will want to have a group, analogous to the users' groups at AUI and other national laboratories, that we can rely on for consultation."

It now remains to be seen whether URA will set up such a users' group based on national high-energy physicist participation. The community, having been asked to wait twice to see whether existing organizations could accommodate the needs of particle physics, is still seeking an adequate voice.

—BH

New Direction at IPPS— A Talk with Louis Cohen

Under the new executive secretary, old programs at Britain's Institute of Physics and the Physical Society are going well, and some new ones are contemplated. So we found recently when we visited the executive secretary, Louis Cohen, and his deputy and the society's editor, A. C. Stickland. Cohen we found at IPPS main offices, their elegant white-fronted mansion facing Belgrave Square, London. Miss Stickland was a ten-minute bus