

Committee on Education Annual Report -- 1999

The members of the Committee on Education for 1999 were: Meigan Aronson (Chair), Donald Burland, Kenneth Hass (Vice-Chair), Theodore Hodapp, Don Harvey Madison, Andrea Palounek, Richard Saenz, James Wynne, and Paul Zitzewitz.

Don Madison resigned mid-year, and his term will be completed by Ronald Bieniek.

Activities for 1999

The Committee on Education met twice during 1999, on 22 April in Baltimore and on 8-9 October in College Park. In addition, we met jointly with the Forum on Education on 8 October.

In 1997 the membership of the COE was increased to nine individuals, to include the chair, vice-chair, and councilor of the F Ed. This change will be reviewed by the APS in the upcoming year, and the COE would like to propose the following modifications. We have found the enhanced interactions with the F Ed stimulating and valuable, and wish to strengthen them. However, it has become apparent to the COE this year that sufficient interaction can be achieved with fewer than three F Ed representatives, leaving the APS more flexibility in appointing COE members with expertise relevant to ongoing projects. We have particularly felt this year that a larger COE membership would be extremely helpful, both in order to have a broader range of experience and expertise on the COE, and to provide sufficient manpower to carry out our ambitious slate of projects, described below. For these reasons, we recommend a change in the number of F Ed representatives on the COE, while keeping the total number of members at its current level of nine. We suggest that one member of the COE will be a member of the F Ed Executive Committee, and will be selected by that body to serve a one year, potentially renewable, term on COE. Each year, two additional members of the COE will be appointed by the APS. We are thus not seeking an increase in the size of the COE. We feel that one F Ed representative is sufficient to ensure strong interactions between the COE and the F Ed, while giving the COE the benefit of having two more of its slots each year filled by volunteers who can devote more attention to COE initiatives.

The Committee has continued to provide advice and assistance to the APS this year on matters pertaining to education. We have helped prepare a statement (URL) articulating the APS' view of the importance of active involvement of physicists in K-12 education issues. We have also provided feedback and advice on an APS Education Department proposal "Physics Teacher Education Coalition (PTEC)" to improve training techniques for secondary school physics instructors, and have lent our enthusiastic support to a new APS/AIP/AAPT initiative for the revitalization of undergraduate physics education.

The COE feels strongly that it should itself be the source of new initiatives to improve aspects of science education. We have spent most of our effort this year in identifying and laying the groundwork for two new projects, which we expect will require several years to mature. We find the issue of science teacher preparation particularly compelling, and plan to investigate and

publicize existing best practices. The first steps towards this goal include the discovery of programs which are nationally acknowledged as model programs, through investigation of academic training units and polling of secondary school science teachers and their employers. We expect that site visits by part of the COE will be an effective means of obtaining this knowledge. In addition to understanding the elements of successful teacher preparation, we will be especially interested in identifying possible institutional barriers, and the ways which successful programs have overcome them. We expect that the information gathering phase of this project will extend well into 2000. At the same time, we will begin planning for the next phase of the project, the dissemination of results. Clearly, the F Ed membership constitutes a valuable resource for this project, which we intend to mine for expertise, advice, and contacts with the help of the F Ed representatives on the COE. Of course, we expect that the F Ed members will have a natural interest in our results, and we would welcome their involvement in publicizing and utilizing the results of the study.

We feel that this is a time of unprecedented opportunity for making progress in improving physics and science education. Not only is there increasing political and public support for such improvements, but there are also many exciting and innovative programs both proposed and underway. The COE is in a unique position to learn about many of these projects, which in many cases are not broadly known or appreciated in the physics community. We believe that publicizing these programs provides two benefits. First, knowledge about effective practices can be shared more widely, in particular beyond the circle of physics pedagogy researchers. Second, progress will be most direct when efforts are not duplicated but coordinated, and when researchers are well informed about advances in their field. The COE is beginning to gather information and discuss different ways in which it might play a more active role in brokering this information to the APS membership and leadership, as well as interested parties in funding agencies, local and national government, and in sister science organizations. We acknowledge that much information is currently available, but in scattered sources. We are exploring the possibility that COE might serve as a central clearinghouse for this information, and a possible model we might wish to emulate is Bob Parks' ``**What's New?**''.

In summary, 1999 has been a year of rebuilding and refocusing for the COE. We welcome your comments and assistance with our plans, and look forward to reporting to you next year on our progress.