

## **Committee on Education Annual Report -2002**

The members of the Committee on Education (COE) for 2002 have been: Robert Beck Clark, Chair, Beth Cunningham, E. Dan Dahlberg, Shila Garg, Martin Paul Gelfand, Kenneth S. Krane, Leon M. Lederman, Usha Mallik, Helen R. Quinn and Jack M. Wilson. Paul Hickman has served as a consultant to the Committee. The representatives of interested groups who have served as liaisons to the COE are Warren Hein, AAPT and Jack Hehn, AIP. Fredrich Stein is the APS liaison and Sue Otwell the APS staff member who has served the committee ably and with great dedication. Wolfgang Christian, the chair-elect of the APS Forum on Education, has also served as a liaison during the latter half of the year. The past chair of COE has been Richard A. Saenz and Kenneth S. Krane has also served as the liaison to the National Task Force on Undergraduate Physics (NTFUP).

The COE met twice during 2002: first on April 6-7 at the American Center for Physics in College Park, MD and second on September 28 at Brigham Young University in Provo, UT. Robert Beck Clark also represented COE at the APS Retreat in Annapolis, MD, June 19-21. Kenneth Krane represented the COE for the APS Forum on Education Executive Committee electronic meeting, October 19.

### **Organizational Activities in 2002**

During 2002 several action subcommittees were formed with specific responsibilities for educational issues:

***Monitoring Pending Legislation:*** (Beth Cunningham, Kenneth S. Krane and E. Dan Dahlberg)

This subcommittee was charged with the responsibility of making recommendations regarding suggested actions of the COE associated with pending legislation. The COE might then approve and forward these recommendations to the Forum for its consideration. Mike Lubell has agreed to provide updates from his office to this subcommittee regarding pending legislation of educational interest.

**Advanced Physics (Advanced Placement and International Baccalaureate Physics Programs)** (Martin Gelfand and Usha Mallik)

This subcommittee was charged with the responsibility of considering the recent National Research Council (NRC) report on Advanced Physics and materials from the College Board regarding Advanced Placement Physics and making recommendations to the COE at subsequent meetings regarding action which might be taken by the APS regarding proposed reforms for Advanced Physics programs at the pre-college level.

### **APS Education Award (Kenneth Krane and Shila Garg)**

This subcommittee was organized in April 2002 to specifically review the draft of recommendations for an APS Education Award and to suggest a course of action in this regard at the October Meeting of COE.

### **APS Education Award Implementation (Wolfgang Christian (chair), Beth Cunningham and Fred Stein)**

At the October COE Meeting the Education Award Subcommittee recommended that the COE proceed with the development of a specific proposal for the implementation of an APS Education Award including criteria and procedures for the selection of award recipients in time for the April, 2003 COE meeting. This new committee was charged with that responsibility.

## **COE Actions and Support Activities in 2002**

### **Physics for Everyone**

During the 2002 meetings of the COE, the movement to encourage the reform of the order in which science is taught in secondary schools was considered extensively. During the October meeting, a detailed presentation on the Physics First initiative was made by Leon Lederman and Paul Hickman. After extended discussions, a statement for consideration for the APS Council entitled, Physics For Everyone, was passed unanimously by the COE and forwarded to the Council in early October.

### **New Faculty Workshop**

The COE has been enthusiastic in its support for the New Faculty Workshop and is particularly pleased at the announcement that the NSF has awarded the consortium of AAPT, APS and AIP funding for an additional 5 years of this highly successful program. It has been proposed by COE members that a worthy goal for the APS would be to raise the funding necessary to endow the long-term continuation of the New Faculty Workshop. It is estimated that the sum of \$3 million could accomplish this purpose.

### **National Task Force on Undergraduate Physics (NTFUP)**

The COE applauds the organizers of the NTFUP program and its success in completing its survey of the U. S. undergraduate physics programs with an enviable response rate of 74% and the completion of visits to 23 institutions with reportedly successful undergraduate physics programs. The report summarizes the lessons learned regarding the common characteristics that appear to be responsible for the success of these programs. The COE has also encouraged the NTFUP and the physics community to disseminate the results of this study as widely and frequently as possible.

### **Advanced Physics (AP and IB Physics)**

During the April meeting of the COE Jerry Gollub and Jay Labov presented an overview of the report prepared under their direction for the National Research Council (NRC). Will Pfeiffenberger and AnneMarie Zolendz who oversee the development of the Advanced Placement (AP) Physics Examinations of the Educational Testing Service (ETS), also reported

on the current status of the Advanced Placement Program in Physics. The matter was discussed in great detail at the October meeting and the recommendations of the subcommittee on AP Physics, Martin Gelfand and Usha Mallik were considered. The COE agreed with the NRC report that some of the most serious problems are associated with the current AP B level examination which is designed to allow students to receive credit for the standard algebra-trigonometry based college level physics course. This course is usually required for college students pursuing admission to medical programs. The COE agreed that the primary initiative needed is the reform of this seemingly flawed course at the college level, with the hope that this would also lead to reforms in the AP B course which is intended to replace the college level course.

### **International Year of Physics in 2005**

At the October meeting of COE a report was presented on the tentative plans for the International Year of Physics in 2005. The COE recommended that the APS give its fullest support to the organization and presentation of the International Year of Physics and its theme of Einstein in the 21st Century.

### **APS Office of Education and Outreach Initiatives**

At the COE meetings this year, the APS Office of Education and Outreach has reported on a number of innovative activities and initiatives in which it is playing a role. In February 2003 a conference on Mobile Physics Outreach is scheduled involving the leaders of local physics outreach programs. The COE is most enthusiastic in its support of this much-needed activity. In addition, the office has drafted a statement on "Why Study Physics?" Some additions to this statement were suggested by COE members along with the recommendation that physics departments and members of the physics community be given both permission and encouragement to use and disseminate this excellent statement as extensively as possible.