

# **Committee on Careers and Professional Development Annual Report -- 1999**

**October 29, 1999**

## **Summary**

The driving force for the committee last year and for the foreseeable future will be its commitment to the creation of a stable and useful Careers and Professional Development Liaison (CPDL) program. Most of its activities during 1999 were directed toward fulfillment of that objective. Via a web site, short courses, workshops, site visits and outreach to related units such as FIAP, the committee mapped a course of measurable progress. However, it recognizes that a committee of volunteers assisted by an overworked headquarters staff who can apply themselves only part time to career activities is not a prescription for success. Unless the CCPD is provided with additional staff support and a modest budget, it will continue to move ponderously ahead with its agenda. Next year, four new members will fill empty positions on the committee, and a new chairman and vice-chairman will assume their responsibilities. The combination of this newly energized committee, augmented by solid backing from the APS, then will greatly enhance the chances for success of the liaison program. Other matters related to the mission of the committee also will need to be addressed next year. These include exploring the concept of accreditation of physics programs by methods analogous to the ABET process, coordination of current career and professional development activities within the Society, and interfacing with the Physics Overview Project of the NRC. Taken together, the CCPD agenda is a full one, reinforcing the argument for additional Society support.

## **Introduction**

During calendar year 1999, the Committee on Careers and Professional Development established the pathway to a self-sustaining program entitled the Careers and Professional Development Liaison Program. We believe that it will prove to be of benefit to physics undergraduate and graduate students and to junior faculty in participating degree-granting physics departments.

The committee wishes to acknowledge the invaluable support and efforts of Barrie Ripin and Arlene Modeste Knowles throughout the year. We know that each has many other responsibilities, and we deeply appreciate the time they have devoted to our needs, in particular. We regret that Barrie is leaving us to explore other professional opportunities; perhaps it was our constant focus on careers and professional development that set him to thinking about his own career. We wish him great success in his new incarnation whatever form it takes. We hope he will find a way to maintain his contacts and share his wisdom with the committee. Later in this report, we will have more to say about the general need for APS staff support for the committee.

The CCPD met twice in 1999. On 26 January, the meeting took place at the American Center for Physics, but the Fall meeting convened on 28 September in the APS offices in the National Press Building on 14th Street in Washington, DC. This year we used conference calls to supplement our regular meetings as a means of maintaining the flow of information during the long interval

between January and September. They also enabled us to invite remote participation by representatives of other organizations such as FIAP, thereby reducing travel expenses and the workload of our administrative assistant, Arlene Knowles. Finally, they provided us with a means of setting the agenda for the next meeting early enough to ensure that the committee members were prepared in advance.

### **Career and Professional Development Liaison Program**

The primary thrust of the CCPD in 1999 was directed at nurturing the careers and professional development liaison (CPDL) concept that began in earnest in 1998. The CPDL is multifaceted, and includes the following activities:

1. development of a set of short courses that meets needs defined by polling intended attendees,
2. creation of a web page to provide liaisons and other interested parties with a broad spectrum of information and links related to careers and professional development,
3. organization and management of an annual CPD liaison workshop in conjunction with the March APS meeting or at some other appropriate APS (or AIP) function, and
4. organization and participation in CPD site visits to universities and colleges that wish to share their experiences in outreach programs designed to enhance the job opportunities of their student body.

The committee sponsored a short course at the Centennial meeting in Atlanta. The course was entitled, " Management Problems of the Technical Person", required a fee of \$75 (including lunch), and was given from 8am to 1pm on Sunday, March 20. The 60 attendees were generally pleased with the course content, and, in fact, would have liked a longer course. When polled, they suggested that future courses address such topics as "time management" and "technical project management". Based upon the success of this first effort, Arlene Knowles will begin planning for another course at the March 2000 APS meeting. Additional topics, e.g., "entrepreneurial skills" and "intellectual property issues", will be given consideration as these subjects are of particular interest to students and faculty headed for careers in industry.

The committee is grateful to Barrie Ripin, Arlene Knowles and Diandra Leslie-Pelecky for working toward the creation of a truly useful web site. They are close to the point where they can ask liaisons and others to preview its contents and offer ideas and constructive criticism. One of the missing ingredients is input from the industrial side. We will explore the possibility of obtaining help from FIAP and the Industrial Physics Forum to close this gap.

At present there are approximately 65 individuals serving as CPDLs. Not all are faculty members; a few are students and others, administrators. The potential for growth in the number of liaisons depends in part on a decision about eligibility of institutions. If the program is limited to Ph.D.-granting institutions, then the growth will be limited. The committee did not act on this policy matter, but it will have to do so in the near term because a decision has some bearing upon the format and topics for future liaison workshops.

The committee agreed to recommend to the APS that the second workshop for career and professional development liaisons be held at the March 2000 meeting. Barrie Ripin and Diandra Leslie-Pelecky have begun to formulate a plan for the format and theme of the workshop relying upon their experience in organizing the successful first workshop at the March 1998 APS meeting. The committee agreed to respond quickly to their suggestions so that they can be implemented in a timely manner. It was generally agreed that the meeting should focus on no more than one or two topics, perhaps to be coupled to a poster session affording liaisons an opportunity to advertise and discuss their successful ideas.

Barrie Ripin and Bo Hammer (AIP Education Div.) took another important step in the development of the CPDL program when they made a site visit to the Southwest Texas State University campus in February. The purpose of the visit was to gain from the experiences of a school whose physics department has established and sustained innovations in physics education that are consistent with the goals of the CPDL objectives. The committee has seen a draft report of the site visit, and is impressed with the results. It encourages the APS to find resources for continuing such visits. The collective wisdom accrued during these visits should then be shared with institutions that wish to inaugurate or improve upon their own career and professional development programs. It is important that the Society find a means to support this effort because the committee is not optimistic that funds can be coaxed out of other agencies or foundations.

Finally, on this subject, the committee wishes to acknowledge the attendance of Jim McCambridge who has agreed to serve as the liaison from FIAP. His presence at our meetings will be an invaluable service to the committee and the Forum. In fact, two issues have arisen that will require assistance from Jim. First is the question of whether the committee can assume responsibility for the Tutorial on Professional Development that FIAP has been running. During one of our conference calls Galen Fisher, FIAP Chair suggested that it would be more appropriate for the CCPD to handle this function. Jim McCambridge has appeared on the scene at just the right time to develop more information that can guide the CCPD in a proper course of action. Once again, the question of financial support from the Society is likely to arise as this subject is pursued. A second topic with FIAP/CCPD implications is embodied in a white paper prepared by FIAP that proposes an APS Industrial Sabbatical Program for Academic Faculty in Physics. The committee has not yet seen the proposal, but Jim will discuss the subtleties of writing grant proposals for such endeavors with Barrie Ripin, and will put the author of the white paper in touch with him. The committee has considered the idea of an industrial sabbatical program at other times, and the existence of FIAP could make the difference in mounting a successful program. It seems clear that the CPDL program would be strengthened by this related activity.

### **Accreditation of Physics Programs**

The APS Committee on Education has drawn our attention to recent actions by the Accreditation Board for Engineering and Technology (ABET), that could have serious implications for physics departments and for their graduates. The concern arises from the fact that the ABET requirements have been moderated for many engineering disciplines to the extent that they do not seem to require physics courses for accreditation. The implication is that the engineering

curricula can incorporate the necessary physics concepts, in much the same manner as physics departments have treated mathematics courses historically. A possible way to address this potential problem is for the physics community to examine the value of accreditation of physics programs in order to maintain their status in the engineering curricula. The relevance of this issue to the CCPD should be evident. If physics graduates are competing with engineers for jobs and industrial criteria include graduation from an accredited program, then the physics graduates may find themselves at a disadvantage. We know of companies that do not hire engineering students from non-accredited institutions. Moreover, the number of faculty lines often depends upon the service courses that currently are provided to engineering students. Therefore, if service courses disappear, then there is the grave possibility that the size of many physics departments will diminish along with the services that they render to their students.

The CCPD has begun to explore this situation, and expects to work closely with Fred Stein of the APS Education Division who will assume oversight of the CCPD upon Barrie Ripin's departure in January. He will assist the committee in obtaining more information about the ABET 2000 criteria and the American Chemical Society's Committee on Professional Training. The ACS sponsors site visits and advises chemistry departments in a program that evidently enhances students' employment success rates. Perhaps this program can serve as a prototype for the APS while simultaneously addressing the ABET question.

### **Future Business of the Committee**

The previous narrative touched upon several topics that will require the committee's attention next year even as it tries to remain focused on the liaison program.

First, the ABET 2000 thrust should be tracked in order to assess its impact on physics departments and employment opportunities for their graduates and junior faculty. Barrie Ripin and Fred Stein participated in a major ABET meeting in Baltimore on October 28 and 29 that addressed the subject of accreditation of applied science programs. With detailed information in hand about the ABET 2000 philosophy and the ACS Professional Training, the committee will be able to chart its course in this area.

Second, the committee has only been able to make a weak attempt to identify synergistic activities of other APS units. As stated in last year's report, other units with career programs may choose to remain autonomous. Nevertheless, the committee should at least make an effort to coordinate these activities so as to optimize use of the Society's resources, and to enhance the committee's ability to meet its mandated obligation to advise the Society on courses of action.

Third, the ongoing NRC physics survey project will culminate in an Overview volume that should include a discussion of current trends in the employment of physicists. The APS has been addressing this topic for a number of years because of its obvious bearing upon Society membership, and upon the perception of physics as a stable career path. The CCPD has offered its assistance to Tom Appelquist's Overview committee in formulating a useful section in their report on careers and professional development.

### **Concluding Remarks**

At the risk of being repetitious, the committee wishes to state its belief that attention to the matter of careers and professional development is rewarding to the Society and to its individual members. At this point in our history, physicists are asking themselves what their role in society is, and how it is reflected in the future job market for them. A continuing evaluation of this situation that enables the Society to act wisely on behalf of its members is a worthy goal. The CCPD proposes to meet that challenge.

Respectfully submitted  
For the Committee on Careers And Professional Development

Allen N. Goland, Chair, 1999