WORKSHOPS FOCUS ON DRAWING RESEARCHERS INTO UNDERGRAD PHYSICS

The American Physical Society and the American Association of Physics Teachers recently held workshops in Santa Fe, New Mexico, and Denver to explore ways of bringing current research topics into the undergraduate physics classroom and laboratory.

APS's Brian Schwartz (Brooklyn College) and AAPT's Judy Franz (West Virginia University) describe the NSF-sponsored program as follows: "The research physics community can make a significant contribution to undergraduate education by identifying and developing materials suitable for inclusion in the physics curriculum.... Such an interaction has been largely missing or uncoordinated in the past."

Santa Fe workshop

About 40 active research physicists representing the major subfields of physics participated in the first workshop, held last June in Santa Fe. The participants agreed on two strategies to bolster the undergraduate physics curriculum: to have researchers infuse core undergraduate courses with homework problems based on their own research; and to involve researchers in improving junior and senior undergraduate laboratories by introducing more up-to-date topics and experiments.

To improve the core curriculum, Santa Fe participants suggested, for example, that modern plasma physics research be used to illustrate problems in electricity and magnetism, or that chaos research be used in teaching classical and statistical mechanics. It was also suggested that researchers could develop problems for the classroom and then publish them in the *American Journal of Physics*.

In discussing ways to improve the junior and senior lab courses, participants used as a model the junior-year lab offered at MIT, where students choose 10 lab experiments out of a possible 20; one or two new lab setups are introduced each year. The conference participants recommended developing an inventory of current experiments for upper-level labs, seeking further NSF support to initiate summer workshops for faculty, and identifying researchers to develop new lab setups.

Denver workshop

At the Denver workshop, held 16–18 November, the two strategies were investigated in greater depth.

The Core Course Group, headed by William Cooke of the University of Southern California, decided that each month two or three problems should be published (with solutions) in *AJP*, with a compilation volume of problems published periodically. Charles Holbrow of Colgate agreed to edit this new *AJP* section. The problems, Cooke said, "must be interesting, must be clear and accessible, and must apply to undergraduate division core courses."

The group discussed various means of soliciting these research problems, including using personal contacts, asking APS divisions for their help and contacting authors of papers in journals such as *Physical Review Letters* and *AJP* to request contributions.

The Junior–Senior Laboratory Group, headed by Jay Kirsch of MIT, came up with several suggestions for improving the physics labs. Chief among these was the idea of disseminating videos of experiments based on contemporary research to faculty in charge of undergraduate labs. According to Kirsch, one possible way to achieve this goal would be to hire someone to travel throughout the country and create a library of such videos. Other ideas included compiling a list of existing lab manuals, identifying exemplary faculty responsible for advanced labs and asking for their participation, and running pilot workshops on lab experiments and techniques, either on campus or at APS or AAPT meetings.

Special Election

APS is holding a special election to fill the vacancy left by Walter Massey, who resigned as APS vice president after being nominated as director of NSF. The two candidates selected by the APS nominating committee are Neal Lane, provost of Rice University, and Donald Langenberg, chancellor of the University of Maryland. Ballots will be mailed to APS members on 15 February and must be received by APS by 22 March. Biographical information on the candidates can be found in the March issue of the *Bulletin of The American Physical Society*.

UNDERGRADS SOUGHT FOR SUMMER RESEARCH

A number of US physics departments and labs are accepting applications from undergraduates for research positions this coming summer. Successful applicants will join a group of 10 to 20 students at each institution, where they will be placed in on-going research programs.

For further information, contact the following: David F. Bartlett, University of Colorado, Boulder; Neil R. Fletcher, Florida State University; Margaret M. Graff, Georgia Institute of Technology; Catherine Olmer, Indiana University Cyclotron Facility; John Huenneken, Lehigh University; Jean P. Krisch, University of Michigan; William G. Lynch, National Superconducting Cyclotron Laboratory, Michigan State University; Linwood L. Lee, Jr., State University of New York, Stony Brook; Terrence W. Rettig, University of Notre Dame; Joseph F. Becker, San Jose State University; Richard A. Lindgren, University of Virginia; Rolf G. Winter, College of William and Mary. ■