Getting More and Better Science Teachers

High school and university science teachers made common cause recently at a National Forum for School Science, organized in Washington, D.C., by the American Association for the Advancement of Science (AAAS). Those who attended were enthusiastic about the opportunity to develop some solidarity. But the problem of both the quality and quantity of science teachers seems to be characterized by a certain intractability owing to the circular nature of the problem.

The bottom line is that teachers' salaries are abysmal. Community support is the key to raising budgets; greater prestige for teaching is a key to getting more support; and potentially good teachers are staying out of the field because of the salaries. Indeed, according to Audrey Champagne of the AAAS, there has been "a precipitous drop in the number of students who perceive teaching to be an attractive career."

Patricia A. Graham, dean of the Harvard Graduate School of Education, observed that past campaigns to improve science instruction have concentrated on creating scientists. Now, she said, the focus has to be on getting the basics of science across to the majority. To this end, she said, the country must move away from "teacher-proof curricula" and concentrate on the development of "curriculum-proof teachers" who are capable of teaching students how to think.

According to George Pimentel, a chemist at the University of California at Berkeley, too many teachers are concerned with facts at the expense of concepts. He related that a group of high and junior high school teachers who attended a summer school at Berkeley were delighted with the courses on descriptive biology and on physics. But they were not so happy in the chemistry class when they were shown three different ways—gas, water, and mercury—of measuring temperature. The fact that different measurements produce different temperatures was "unwelcome news." Said Pimentel: "These teachers have very, very grave needs of depth and understanding."

Schools of education came in for their usual knocks at the meeting, and various proposals were put forward to enable college students to get a taste of teaching—and perhaps get hooked on it—as undergraduate science majors. One of the main conclusions of the forum was that "professionalization" of teaching, including more participation in content-oriented professional associations, is needed in order to raise teachers' self-image as well as their public image.

Meanwhile, two new institutional initiatives on the problem have been announced. One is a Mathematical Sciences Education Board which has been newly created at the National Research Council. Another is the AAAS Project 2061 (an allusion to the next visit of Halley's comet), which has as its goal a thorough rethinking and reform of science education. Scientists, social scientists, and humanists will be featured in panels around the country over the next 2 years to formulate a vision and strategies for bringing it to life.

—CONSTANCE HOLDEN

Senate Shaves NASA, NSF Budgets for 1986

Almost $100 million is up for grabs in a forthcoming House-Senate conference on appropriations for the National Aeronautics and Space Administration. The Senate has shaved the agency's appropriations for fiscal year 1986 to $7570 million, while the House has approved a budget of $7666 million.

The appropriations in both houses fall far short of the $7886 million that the NASA officials sought. This request was equivalent to the $7510-million 1985 budget, after adjusting for inflation. Even if the House prevails in the conference committee deliberations, NASA officials say they will be hard-pressed to proceed with plans for new projects (see page 526).

NASA's Senate funding number fell below the House number largely because of a 1.1 percent across-the-board reduction that was placed on an encompassing appropriation vehicle for Housing and Urban Development and related agencies. NASA also was hit with a $15-million cut in its research and program management budget as a result of a compromise struck on reductions in state revenue sharing.

The National Science Foundation budget for the fiscal year is affected by the 1.1 percent cutback, too. As reported by the Senate, it stands at $1508.9 million, $60 million less than NSF's request. Overall, the agency's budget is up slightly in total dollars above the $1501.8-million 1985 appropriation. Within the NSF budget, research is set to receive the largest funding boost, approximately $44 million—hiking expenditures to about $1346 million.

On another front, NSF officials are talking to the Office of Management and Budget and to other agencies with science programs about a plan for dealing with future program cuts. The impetus for the action is the looming budget-balancing plan that is attached to the debt-ceiling bill. Research programs could sustain major funding losses under the scheme for eliminating the annual deficit by 1991. NSF favors allowing OMB to decide where to chop research programs, instead of having a uniform reduction imposed across all research efforts.

—MARK CRAWFORD

EVIST Restored

The National Science Foundation's (NSF) decision early this year to eliminate its modest program on Ethics and Values in Science and Technology (EVIST) generated an unexpected and sustained reaction from certain members of the scientific community. Congress responded by directing the NSF to devote $1 million per year to EVIST-type activities.

After much discussion on how to abide by the directive, NSF director Erich Bloch announced at an 11 October meeting of the EVIST board that the program will be retained. It is being moved from the Science, Technology and International Affairs directorate to the division of social and economic sciences of the Biological, Behavioral and Social Sciences directorate. All the research directorates are expected to have more direct participation in EVIST projects than in the past and will be responsible for funding some of them.

—CONSTANCE HOLDEN