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INTRODUCTORY PHYSICS EDUCATION

GROWTH IS FORCING changes in introductory physics education as well as in other parts of physics. The teacher of introductory courses now has more physics to teach to more students. He is adapting his courses to incorporate new points of view, new concepts and new facts; he is changing his techniques to deal with the growth of the student body and to use new educational aids.

But the growth of physics enrollments has not kept pace with the growth of the student body. As Susanne Ellis points out in this issue, the percentage of college students taking a first physics course has declined; high-school enrollments reflect the same trend. There is growing concern that physicists are failing to communicate the rudiments of physics to the generally educated man, that we may be in danger of losing contact with our society as a whole. Thus, somewhat paradoxically, physicists face the problems of a growth that is large yet not large enough.

For this special issue of PHYSICS TODAY we have solicited descriptions of some of the changes proposed and introduced to deal with these problems. The changes cover a wide spectrum of techniques and emphases, and we have classified them according to their corresponding student groups, those taking *pre-college* courses and those taking *college* courses. In the first category we have descriptions of the Physical Science Study Curriculum, Harvard Project Physics, the Engineering Concepts Curriculum Project and Britain's Nuffield physics teaching project.

Uri Haber-Schaim discusses the PSSC course, now ten years old, and its younger brother Introductory Physical Science. Gerald Holton summarizes the status of PSSC's prospective competitor, Harvard Project Physics. The British response to the need to update physics teaching is described in Eric Roger's report on the Nuffield teaching project.

An interesting attempt is being made to present physical science within the conceptual framework of systems engineering. Edward David and John Truxal discuss ECCP, which is developing such a course for high-school students. V. Lawrence Parsegian describes a similarly oriented college-level course intended to give nonscientists an integrated, philosophical view of physical science. Another college-level course for nonscientists is discussed by the staff of the project Physical Science for Nonscience Students.

No description of contemporary physics education would be adequate without mention of the Feynman lectures, the Berkeley course and the new MIT course. Howard Stabler tells some of his experience teaching from the first volume of Feynman; A. Carl Helmholz describes the Berkeley course; and Robert Hulsizer presents a brief note on the MIT project.

All the stir in college physics education has created a need for an organization to serve as a clearing house for ideas and to act as a coördinator. John Fowler relates how the Commission on College Physics is working toward these ends.

Despite much outward enthusiasm for the new courses, many teachers are wary of the changes. They fear valuable features of the traditional approach may be lost without compensating gains. Mark Zemansky contributes a note of caution along these lines, reminding us that there is far from unanimous agreement on the virtues of these reforms.