The Education Activities Board of the Computer Society seeks to provide sound guidelines for the education of the computer professional.

The ongoing and rapid rate of technological development in the computer and associated fields continues to place a special burden on computer professionals to stay up-to-date. A solid educational foundation is essential for the lifelong learning necessary to meet this challenge. The Computer Society has a responsibility to assist its membership and the institutions that educate them in offering programs that prepare graduates for entrance into the computer science and engineering profession. The articles in this issue address some aspects of the education of the computer professional.

The nature and quality of precollege educational programs is an appropriate starting point for a discussion of the education of the computer professional. In the first article, "Education and America's Industrial Future," Larry Grayson reports on the status of precollege education in the United States. His article establishes a correlation between manufacturing productivity and the mathematics and science capabilities of the US labor force and then gives some alarming statistics relative to the capabilities of current US secondary school graduates. Hopefully, this article will provide a stimulus for all in the computer field to provide the leadership and support at both the local and national level to make the necessary changes in the US education system. Such changes are essential to higher education in general, and to computer science and engineering education in particular. Dr. Grayson notes some of the efforts of the IEEE at the Institute level to address these problems. The Computer Society is also addressing this problem through participation in the Technology in Education project sponsored by AFIPS. This project is now at the stage of testing of the prototype materials and procedures. A full report will appear in a future issue of Computer.

In 1977 the Society published the report "Model Curricula in Computer Science and Engineering." This report provided a comprehensive overview of the material that should be contained in a basic undergraduate curriculum. In 1981, a committee was formed to update this report, and after an extensive review, decided that all aspects of a program needed to be addressed. In 1983, The Computer Society Model Program in Computer Science and Engineering was published. This report addressed the faculty and other resource requirements of a program in addition to an update of the curriculum aspects. The Educational Activities Board, or EAB, undertook a project to address the design component of such a program. The report on this project will be published this year. The second article in this issue, "Design Education in Computer Science and Engineering," presents an overview of that project.

Laboratories are one aspect of computer science and engineering programs that are very difficult to sustain. In 1984, the EAB initiated a project to address this issue. The highlights of this Laboratory Project are described in the Update section of this issue. In the third article, "Using Low-Cost Workstation to Investigate Computer Networks and Distributed Systems," Mark Sherman and Ann Marks of...
Dartmouth address the same issue by presenting the design of a laboratory for computer networking. The article provides the highlights of an interesting educational experiment and illustrates how the laboratory can be used to teach this very important yet still somewhat amorphous topic.

The demand for educational programs in the computer area continues to exceed the ability of the higher educational system to provide quality programs. Many existing programs are marginal or substandard in quality. This presents a problem for both the prospective students and employers because of the difficulty in assessing the quality of programs. It has been recognized that professional accreditation of academic programs helps to solve this problem. The Society played a major role in establishing criteria for the Accreditation Board for Engineering and Technology, or ABET, accreditation of engineering programs in the computer area.

Programs in the computer area that are not based in engineering have, in the past, had no accreditation mechanism to assist them. This past year the Computer Science Accreditation Board, or CSAB, began operation. CSAB was established by the joint effort of the Society and the ACM and provides an accreditation mechanism for this class of programs. It is now completing its first cycle of visits and evaluations. Naturally, as with any new venture, there are some areas of concern and disagreement. One class of programs for which there was concern are those based in liberal arts colleges. In the fourth article, "Vocationalism and the Whole Man," a report on two workshops, Jerry Engel and John Dalphin present the results of some of the efforts of the Society and the ACM to address this issue.

In an effort to gain feedback on the wider issue of accreditation of computer science programs of all types, the EAB organized a panel session at Comcon Spring this year. In the fifth article, "Computer Sciences Accreditation Pro and Con," Ware Myers presents a summary of this session.

References