AIChE ANNUAL REPORTS:
EDUCATION PROJECTS COMMITTEE

Various AIChE Committees concerned with educational matters have furnished CEE reports of their activities.

L. BRYCE ANDERSEN, *Chairman*

The 20th edition of the Committee's widely distributed publication, CHEMICAL ENGINEERING FACULTIES, has been published at the University of Texas under the guidance of David Himmelblau. The directory, which lists faculties and other information about chemical engineering departments in the United States, Canada, Great Britain, and Australia, is published in cooperation with the national office of AIChE. Copies are supplied to academic departments and to Committee members. They are also available for sale through the AIChE national office.

The Design subcommittee is sponsoring a full day symposium on "Educational Programs in Process Design" at the annual meeting in Chicago. The subcommittee is chaired by Howard E. Turner of duPont and C. Judson King of the University of California at Berkeley. Dr. King is also responsible for developing a Design Education Workshop as part of the 1972 Summer School for Chemical Engineering Faculty being planned by the Chemical Engineering Division of ASEE.

The chairman of the subcommittee on Undergraduate Curricula, Clyde W. Balch, has carried out a survey on undergraduate design education. The results of this survey will be reported at the session mentioned in the previous paragraph.

The subcommittee on One-Day Schools held a session on "Chemical Engineering in the Pharmaceutical Industry" at Merck and Company in Rahway, New Jersey. Sixty-seven faculty members from 14 academic departments attended. While one-day schools continue to be successful in the Middle Atlantic area, attempts to generate such schools in other parts of the country have failed.

The subcommittee on Graduate Study, C. Michael Mohr Chairman, has prepared a questionnaire for a survey on outcomes of doctoral programs. It is hoped to complete the survey in the year ahead.

The subcommittee on Films has been reorganized with Robert M. Hubbard as chairman. He is presently active in the development of films for educational purposes and is trying to establish contact with other interested persons in chemical engineering.

The new subcommittee on Cooperative Education has proposed a number of possible directions for action. The chairman, W. H. Tucker, will lead a discussion at the Education Projects Committee meeting in Chicago.

The subcommittee on Chemical Engineering Laboratory Experiments, W. H. Tucker, chairman, has been working with Professor B. E. Lauer on a new volume of laboratory experiments. A further survey of colleges is being contemplated, as is some coordination with the workshop on laboratories to be held at the 1972 ASEE Summer School for Chemical Engineering Faculty.

The chairman of the Programmed Learning subcommittee, Charles E. Wales, recommends disbanding the subcommittee because very few chemical engineers are writing programmed instruction. He feels that this activity can be more adequately handled by the ERM Division of ASEE.

C. Judson King, University of California at Berkeley, became chairman of the Committee January 1, 1971.

CONTINUING EDUCATION COMMITTEE

K. D. TIMMERHAUS *Chairman*

Engineering not only serves man but has assumed a deep responsibility for the effect of its contributions on society. For the graduate of a well grounder engineering program, continuing engineering studies will be essential in order to remain informed and to retain the ability to make appropriate decisions in this rapidly advancing technological society. The engineer must assume the responsibility for maintaining his competence at the maximum level, but industry, government, universities and professional societies must

provide opportunities for continuing education. ontinuing engineering studies are a national obligation of the entire engineering profession to the progress of mankind.**

Similar thoughts by a forward looking national AIChE leadership motivated the initiation of the AIChE Continuing Education Committee in 1963 under the capable leadership of W. R. Marshall, Jr. From a modest beginning of two programs the AIChE Continuing Education Program has now grown to the point where some fifty programs are annually scheduled in convenient locations across the country to provide assistance to chemical engineers with their continuing education programs.

THE PRESENT AIChE Continuing Education Program involves four different types of programs. The Today Series is a tutorial short course designed to update chemical engineers who have not had the opportunity to become familiar with material which is now part of the undergraduate chemical engineering curriculum but was not so ten or fifteen years ago. The AIChE Advanced Seminar is a short course intended for the chemical engineer familiar in a specific area of chemical engineering but desiring to learn what is going on in the research frontiers of the area. The Management Seminars are designed for chemical engineers who are adequately trained technically but are now experiencing the need to become more acquainted with the latest management techniques. Finally, the AIChE Continuing Education Workshop individually involves the participating chemical engineer with both experts in a certain field and others interested in the same field. This latter technique has been successfully employed for subjects like pollution, manage, ment, computer use, etc.

During the past four years the Committee has, with the gracious assistance of many dedicated chemical engineering lecturers, developed thirty-eight different Today Series, six AIChE Advanced Seminars and four Management Seminars. (At least six more programs are currently being considered by the Committee for 1971.) During 1970, the Committee sponsored a total of thirty-four Today Series, three AIChE Advanced Seminars, three Management Seminars and one Workshop. All but three of the forty-eight programs were two-day programs. These programs have been scheduled principally at AIChE meetings. However, the more popular programs have also been scheduled at other locations across the country often with the support of the local AIChE section. The list of programs developed by the Committee includes such topics as mathematical modeling, simulation, optimization, strategy in process engineering, prediction of design data, automatic control, transport phenomena, reaction engineering, catalysis, statistics, statistical design, technical economics, heat transfer, distillation, polymer processing, instrumentation surface phenomena, air pollution control, water quality control, legal aspects in engineering, etc. Printed lecture notes for some of these programs are available from the New York AIChE office at nominal cost to local AIChE sections desiring to present these programs to their members.

To more clearly ascertain the specific needs of chemical engineers in local AIChE sections the Committee has recently formed a subcommittee which will poll and interview key representatives of local sections. This survey will be similar to the one undertaken by the South Texas section in 1963. However, this survey will go beyond determining the short course developments desired by various individuals in that it will try to assess what programs should be made available on the national AIChE level and what programs should be made available on the local section level. In addition, the Committee will seek to determine what types of programs and media are best suited for individuals of large sections, small sections, large companies, small companies, etc. Greater emphasis will also be placed on locating key personnel in the various local sections who can serve as focal points for that section's continuing education program.

IN LINE WITH TRYING to develop different types of continuing education programs, for the varied interests of chemical engineers, the Committee with the kind assistance of the Union Carbide Corporation has just arranged to develop a three hour video-tape presentation on "Fundamentals of Heat Transfer." This program is a shortened version of a Today Series by the same name which has been well received by attendees of the two-day course. In attempting this video-tape program, the Committee felt that it should explore the reactions of local section members and individuals pursuing a variety of continuing education programs to determine if this media would not only fill a need but also be accepted as an ad-

**E. Weber, President of The Polytechnic Institute of Brooklyn, presented at ASEE Continuing Engineering Studies Conference, Dec. 12-13, 1966, Chicago, Ill.

junct to their educational programs. Plans call for making this video-tape available on a minimal rental fee basis with an accompanying survey of all viewers of the tape. From comments of the viewers, the Committee should be able to determine whether a series of video-tape presentations should be developed of the more popular programs in the Today Series.

Because of the gradually increasing need for continuing education by all chemical engineers, the Committee has formulated a ten-point program to guide it in its future operations. These are:

- Constantly upgrade both present and future continuing education programs.
- Increase the quantity of published material from various continuing education programs.
- Develop better techniques for determining the continuing education needs of AIChE members.
- Develop new programs which fill these continuing education needs of AIChE members.
- Assist local AIChE sections with development of their own continuing education programs.
- Increase acceptance of the continuing education concept by industry.
- Further the cooperation with continuing education programs of educational institutions.
- Develop closer working relationships with other professional societies having continuing education programs of interest to AIChE members.
- Continue the exploration of new media to provide continuing programs in a more convenient and usable form for AIChE members.
- Extend the publicity coverage of both AIChE and non AIChE continuing education programs of interest to AIChE members.

Available manpower in the New York AIChE Office is directly related to the number of continuing education programs that the Committee sponsors. This number, during the past two years, has been established at approximately fifty. The Committee is, therefore, planning no more than this number on a national level for both 1971 and 1972. Greater emphasis will be placed on having the local AIChE sections develop their own continuing education programs with assistance from the Committee. The nucleus of available programs is now sufficient to give the local AIChE sections a wide variety of choices to satisfy their continuing education needs. However, as noted above, the Committee will continue to develop additional quality programs to meet the ever changing needs of the AIChE membership.

The Education Projects Committee carries on projects oriented toward chemical engineering education. Suggestions for projects come from various sources. The new activities are initiated only if an interested person can be found to serve as chairman of a new subcommittee. The projects develop at various rates and subcommittees disappear when projects are completed and no further work is proposed.

ChE book reviews

Material and Energy Balance Computations. E. J. Henley and E. M. Rosen. John Wiley & Sons, Inc. (1969), pp xxx + 577, $14.95.

Henley and Rosen have undertaken a major task in this book, that of combining the "new stoichiometry" with the presentation of those chemical and physical principles and manual calculation methods usually taught in a beginning chemical engineering course. The "new stoichiometry" consists of linear algebra, numerical methods and machine computations plus some changes in the traditional ways of formulating the approaches to problem solutions.

A major judgment is that, to quote from the Preface, "We recognize that there is more material in this book than can be successfully incorporated in even a one-year course." It is this reviewer's opinion that critical deletion of material would have better served the authors' aim of a text emphasizing the new stoichiometry. To cite only one example, the longest chapter in the book is that on thermodynamics. Most of this chapter deals with the second law and related functions, material not essential to most material and energy balances.

The authors' correctly point out that by selecting six of the nine chapters an instructor may use the text as a classical stoichiometry book. In this regard, the treatment of some topics is judged to be less successful than that of some other basic texts. One example is that major bugaboo of the beginning course, units and dimensions. The section on units and dimensions dwells more upon what units are not than what they are, tending to obscure rather than clarify their nature and use. Another example is that the presentations and applications of the laws of conservation of mass and energy do not emphasize the value of a general (i.e. a word) statement of these equations as a framework for setting up the specific equations for a particular problem. Still another example is that there is only a very brief treatment of the unsteady-state.