

# CACHE NEWS

**News About Computers  
In Chemical Engineering  
Education**

No.8

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## PURPOSE OF CACHE

CACHE is a non-profit organization whose purpose is to promote cooperation among universities, industry and government in the development and distribution of computer related and/or technology based educational aids for the chemical engineering profession.

## MEMBERS OF CACHE

### President

Duncan A. Mellichamp, University of California, Santa Barbara

### Vice President

David M. Himmelblau, University of Texas at Austin

### Secretary

Rudolphe L. Motard, University of Houston

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Scott Fogler, University of Michigan

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J. D. Seader, University of Utah

Warren D. Seider, University of Pennsylvania

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### Industrial Members

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### Advisory Committee

William Corcoran, California Institute of Technology

James Fair, Monsanto

Donald L. Katz, University of Michigan

John J. McKetta, University of Texas at Austin

W. Robert Marshall, Jr., University of Wisconsin

## COMMUNICATION WITH CACHE

CACHE actively solicits the participation by interested individuals in the work of on-going projects. Anyone who wishes to learn more about current CACHE activities may contact any member or write to CACHE, Room 66-405, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139.

The *CACHE News* is published one or two times a year to report news of CACHE activities and other noteworthy developments of interest to chemical engineering educators. Persons who wish to be placed on the mailing list should notify CACHE at the address listed above.

## CACHE NEWS



## NATIONAL SPONSORING COMMITTEE

CACHE is forming a National Sponsoring Committee to serve as the development auxiliary of CACHE. Its general function will be to raise funds from companies and foundations to sustain the operations and new initiatives of CACHE over the next few years. The committee will help in creating solicitation material, providing contacts with the appropriate individuals in industry, and communicating our program needs. The sponsoring committee is being put together by Bill Corcoran who is chairman of the CACHE Advisory Committee. They hope to be completely set to go by this summer.

## UNIVERSITY SOLICITATION

CACHE has initiated a solicitation of universities for 1978. Funds are being sought to carry out on-going CACHE activities and to provide seed money for new programs. Each department of Chemical Engineering in the United States and Canada is being asked to provide a subscription of \$200 (or more) in any form compatible with the institution accounting procedures.

A previous solicitation was quite successful, and over half of the Departments of Chemical Engineering made a contribution to CACHE. We hope to achieve similar results with the new solicitation.

## COMMITTEE FOR INTERNATIONAL COOPERATION AND COORDINATION (CICC)

Initial overtures have been made to the Working Party on Routine Programs and Use of Computers in Chemical Engineering of the European Confederation of Chemical Engineers for the purpose of starting some new modes of cooperation. The objectives of the committee are the following:

1. to exchange information between CACHE and groups such as the Working Party on Routine Programs and Use of Computers in Chemical Engineering. As to the types of information, we plan to start with the exchange of newsletters, articles, and meeting information and perhaps later on can exchange reports and conference proceedings.
2. to co-sponsor programs at professional meetings both in the United States and in Europe
3. to exchange computer programs and eventually put them on networks
4. to encourage visits and exchange of Visiting Professorships

CACHE members and representatives who visit Europe should mention the activities of the CICC to their colleagues and try and interest their colleagues in working toward any of the above objectives.

## FLOWTRAN PROJECT

Since Monsanto's FLOWTRAN program for simulating and designing chemical processing plants was first made available by Monsanto through CACHE in 1974, the program, which is accessed on the United Computing Systems Network, has been used by 38 different chemical engineering departments.

In January, 1978, CACHE published a third booklet on FLOWTRAN entitled "Exercises in Process Simulation Using FLOWTRAN," edited by Professor J. Peter Clark of Virginia Polytechnic Institute and University. Intended as a source of homework and demonstration exercises, this 209-page booklet contains 27 exercises prepared by professors who have used FLOWTRAN in the past few years. The exercises range from short problems to major comprehensive projects. In most cases, the solutions to the exercises are presented together with comments by the editor and advice on using FLOWTRAN efficiently. The booklet, which is already in its second printing, can be purchased by check for \$5.95 plus \$1.00 for mailing and handling from:

Ulrich's Bookstore  
Attention: E. Bundy  
549 East University Avenue  
Ann Arbor, MI 48104

Two other FLOWTRAN booklets available from the same dealer are:

1. "FLOWTRAN Simulation - An Introduction," 2nd Edition, by Seader, Seider, and Pauls for \$11.95 + \$1.00 for mailing and handling.
2. "CACHE Use of FLOWTRAN on UCS," by R. R. Hughes for \$1.00 + \$1.00 for mailing and handling.

Further information concerning the CACHE FLOWTRAN project can be obtained by writing or calling Professor J. D. Seader, Department of Chemical Engineering, University of Utah, Salt Lake City, Utah 84112, (801) 581-6915.

## CACHE COMPUTER GRAPHICS COMMITTEE

1976-77 saw the first full year of activities by the Computer Graphics Ad Hoc Committee. The efforts of the Committee were focused on two major undertakings both of which were successfully accomplished during the year. These activities were aimed at developing a better-informed community of chemical engineering educators, a meaningful set of technical and educational goals, and possible funding sources.

First, in a joint effort with the organizers of the ASEE Summer School for Chemical Engineering Educators the Committee organized an extremely

successful "Interactive Computing Workshop" in Snowmass, Colorado on August 3-4, 1977. Two lecture-discussion sessions were held, and hands-on demonstrations were given during 4 predesignated periods on 7 computer terminals. Approximately 60 educators attended the presentations, and perhaps as many as 100 came to the demonstrations.

Second, after more than a year of preparation the introductory document, "Computer Graphics in Chemical Engineering Education," is finally ready for distribution to chemical engineering educators. Having been reviewed by knowledgeable experts in computer science, chemistry and chemical engineering, it represents the first comprehensive introduction on computer graphics written specially for chemical engineers.

In support of the preparation of the above document and the development of Committee goals, an experiment was undertaken on program portability. Three graphics programs developed by Scott Fogler using the IG system of Michigan on Amdahl 470 V/6 host computer have been successfully converted to PLOT 10 based programs on a CDC 6600 host computer. The conversion was documented and carried out under the direction of Dick Mah.

The Computer Graphics Committee envisions the following activities for the future:

1. Further experimentation with program conversion with a view to develop standards for program interchangeability.
2. Compilation of potential graphics applications in chemical engineering education - develop a "wish book" list, as a first step towards a coordinated effort in program implementation.
3. A multi-university effort to interchange and evaluate the use of graphics programs in real-life instruction.
4. A continuing effort to introduce graphics to chemical engineering users through workshops and technical meetings. Two sessions on computer hardware are slated for the AIChE Annual Meeting in November 1978.

Anyone interested in the activities of the Computer Graphics Committee should contact its chairman, Professor Richard S. H. Mah at Northwestern University.

## ON THE MOVE

Dr. Rudolphe L. Motard, currently secretary of CACHE and Professor of Chemical Engineering at the University of Houston, will be joining the Department of Chemical Engineering at Washington University, St. Louis, in September 1978, as Professor and Chairman. Rudy will also be directing a new Process Engineering Research Laboratory at Washington University.



## COMING EVENTS

New Developments in Modeling, Simulation, and Optimization of Chemical Processes, Massachusetts Institute of Technology, July 17-26, 1978. Contact: Professor Lawrence B. Evans, MIT.

Summer Computer Simulation Conference, Newport Beach, California, July 24-26, 1978

## CALL FOR PAPERS

AIChE 71st Annual Meeting, Miami, November 12-16, 1978

"Impact of New Developments in Computer Hardware and Software" two sessions. Contact: Professor Richard S. H. Mah, Northwestern University.

"Computers in Process Design and Control," two sessions. Contact: Professor Warren D. Seider, University of Pennsylvania

Computer Applications in Chemical Engineering, 12th European Symposium, Montreaux Palace Hotel, Switzerland, April 8-11, 1979. Contact: Dr. Ing. R. Lierau, F. Hoffman-LaRoche & Co. AG, Grenzacherstrasse 124, CH-4002 Basel, Switzerland.