



CHE DIVISION ACTIVITIES

Program at the 1975 Annual Meeting

Submitted by Prof. William D. Baasel of Ohio University

Would you like to know how your department should be financed, how your curriculum should be changed, how to properly train foreign students, how to obtain research grants, or how to act as an expert witness? Then come to the ASEE annual meeting at Colorado State University from June 16 to June 19, 1975. A program on each of these topics will be presented by your division, the Chemical Engineering Division of ASEE. Besides this, there will be hundreds of other events plus women's and children's programs. We hope to see all of you there.

There are five sessions which the chemical engineering division of ASEE will be sponsoring and another which it will be cosponsoring. One of these events was thought to be of such importance, that it has been designated a miniplenary. It concerns the method of financing a university and departments within a university. It is entitled, "Should a University Be Run Like a Business".

Many universities, both public and private, are having financial problems today, and it appears that they are likely to increase rather than diminish. In 1978 the number of people reaching the age of 18 will peak. From then on for the next decade, at least it is predicted the number of students entering our American universities will decrease. There are some predictions that there will be ten to fifteen percent fewer students in higher education 10 years from now than at present. With fewer students this will mean less tuition money, and hence a greater financial pinch.

Whenever there is a financial crisis there are attempts to reorganize, and currently that trend is taking the form of running the university system within a state as a large business. Many universities receive subsidies based on the number of students they attract and retain. It is recognized that engineering, medicine, dentistry, and agriculture, cost more to operate, and these programs receive higher per capita support than the liberal arts programs. However, within a given area, the support of the program is based on the student credit hours generated. This leads to problems. In the early 1970's when the engineering enrollment

dropped one third, many schools had to fire faculty and curtail course offerings. Now as the enrollment is on the upswing, the reverse occurs and other areas of the university are feeling a cost squeeze.

Harold Enarson, the President of Ohio State University, in an editorial in the Sept. 7, 1973 issue of *Science* noted,

To the new managers, the university is just another large system. It has raw material (students), a labor force (faculty and support personnel), instruments of production (classrooms, laboratories, libraries), a production schedule (academic requirements, classes admitted, and classes graduated), management (the trustees and central administration) and a production index (the cost of producing a student credit-hour). The managerial revolution creates the exact reverse of the goals that are sought. The impact of multiple sources of regulation on the university is to discourage flexibility, cripple initiative, dilute responsibility and ultimately to destroy true accountability.

Universities have always had the problem of evaluating teaching and research. For the latter, one could count publications. Teaching, however, has defied any such quantitative evaluation. Now there is another such dilemma. The quality of one program compared to another defies qualitative measurement, while the cost of producing a student credit hour can easily be determined. A three hour monolog per week by a professor may not be as beneficial as a self-paced course or an open laboratory, but it may cost less. Lecturing to 500 students in freshman psychology is more profitable than a senior elective course in modern control theory and practice. Yet the control course may require more effort by the instructor. A chemical engineering department may have no course which is required by other majors with which it can pad its student credit hours. The equipment in some laboratories may be too expensive to duplicate, so the number of students per laboratory is kept low and the cost high.

The very important problem of relating the quality of education to its cost will be addressed by five panel members at the 1975 annual meeting

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of ASEE in a miniplenary scheduled for 10:00 a.m., Wednesday, June 18. The panel consists of Ruth S. Stockton, a Colorado State senator, who is on the appropriations committee which has a very strong say over university funding; William K. Coors, a member of the Board of Trustees of the Colorado School of Mines and President of Adolf Coors Company; Brage Golding, president of San Diego State University and previous president of Wright State University and department head of chemical engineering at Purdue University; Neal Pings, vice provost at the California Institute of Technology and chairman of the chemical engineering division of ASEE; and L. Bryce Andersen, Dean of Engineering at the New Jersey Institute of Technology. This is a topic which concerns every educator.

A session at 3:45 p.m. on Tuesday, June 17, which should also attract many non-chemical engineers is one which will consist of progress reports on innovative programs in engineering. Four schools have made extensive changes in the traditional ways of presenting engineering and will discuss the successes and problems they encountered. All of these programs are currently in operation.

The West Virginia Program in design oriented education will be presented by John T. Sears, professor of Chemical Engineering. Wilmer T. Kranich, head of Chemical Engineering at Worcester Polytechnic Institute will discuss their program which replaces course requirements with competency demonstrated by projects and examinations. Ohio University's tutorial program will be explained by Professor Nicholas Dinos of the chemical engineering department. This program is based on the Oxford Cambridge Tutorial concept, and is for exceptional students. The final presenter will be Professor Clyde H. Sprague, Coordinator of Engineering at the University of Texas of the Permian Basin. This new university is operating all their engineering courses on a self-paced basis.

The theme of the 1975 convention is "Engineering Education for World Development." On Wednesday at 1:45 p.m. there will be four papers given at a session entitled, "How Should Chemical Engineers Train Foreign Students from Developing Countries." Speakers from the University of Kansas, Toledo, Pittsburgh, and Mis-

souri will discuss how they have changed traditional programs to make them more useful to foreign students when they return to their own countries. They will discuss how to give them more managerial, practical knowledge, and laboratory skills.

A panel of experts will convene on Monday, June 16 at 4:00 p.m. to inform you what a department head can do to obtain research funds for new faculty members. They should be able to tell us how all our departments can obtain five digit research grants for inexperienced proposal writers.

The 3M award lecture which is always a highlight of the meeting will be given at 1:30 p.m. on Tuesday, June 17. The speaker had not been selected at press time.

Have you ever wondered what your legal and moral obligations are if you are called as an expert witness in a trial? Can a lawyer twist you around his thumb? The meeting scheduled for Wednesday, June 18, at 3:45 p.m. and entitled, "Law, Technology, and the Role of the Expert," should provide you with the answers.

If this is not enough, the division also is sponsoring the annual banquet on Tuesday night. It features a presentation by Robert Ferguson, Dean of Engineering at the University of Idaho. He will talk about his experiences in Ecuador and Peru. Bring your wives to this one.

There is also a business luncheon on Wednesday which all should attend so that you may shape the future of your society.

ChE news

NEW CHEMICAL ENGINEERING DEPARTMENT HEAD AT THE UNIVERSITY OF ARIZONA

Dr. Joseph F. Gross has been appointed new Head of the Chemical Engineering Department at The University of Arizona. Dr. Gross succeeds Dr. Don H. White, the founding Head of the Department, who stepped down last year to devote more time to teaching, research and University/industry relations. The Department searched nationwide and then elected to reach into its ranks for the new Head.

Dr. Gross came to The University of Arizona in 1972 from the Physical Sciences Department of the Rand Corporation in Santa Monica, California.

Dr. Gross was educated at Pratt Institute in Brooklyn, New York, and at Purdue University, West LaFayette, Indiana. In 1957, he was a Fulbright Scholar in Germany. He has published over fifty technical papers and holds membership in several learned and professional societies.