

THE ROLE OF DEPARTMENTAL ORGANIZATION IN UNIVERSITY LEVEL CHEMICAL EDUCATION

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A few years ago Mario Savio, leader of one of the early student protest movements at the University of California in Berkeley, referred to administrators as garbage collectors. My experience as student, professor, department chairman and Dean leads me to a somewhat different conclusion; although at times I am inclined to be in agreement with Mr Savio. The recent rash of strikes of garbage collectors in New York and other large cities does point to the importance of garbage collectors in a society which produces enormous quantities of garbage.

In the academic community where the faculty is concerned daily with a complex array of instruction, details of organization are important factors in determining the level of professional productivity. A smoothly functioning departmental organization can provide an environment which encourages innovation in curriculum development and reform as well as quality research.

The departmental chairman occupies a big role in the organization so he should be selected with care. The selection process should include the active participation of both senior and junior faculty of the department although the appointment will usually be made by an administrative official. Criteria for selecting the chairman should emphasize evidence of ability as a leader and administrator as well as evidence of scientific ability. Little if any weight should be given to seniority or age. Often benefit to the department results from selecting the chairman from outside the faculty of the department.

Departmental chairmen should have a fixed term of office. It should be long enough to permit development of programmes and policy and short enough to permit periodic review. There should be a mechanism for removing chairmen who are ineffective and there should be provision for a second term if faculty, administration and the chairman concur that a second term is desirable.

Primary responsibility for recruiting faculty should reside in the department rather than with administrative officers. The department also should have the prerogative of determining the level of appointment—professor, associate professor or assistant professor—based on departmental planning and need, within the budgetary allocations and university policy. The entire departmental staff should have an opportunity to meet candidates for faculty positions and to express an opinion prior to final selection. Candidates should include chemists whose post-graduate training was completed at another university.

Appointments for junior staff should be made for a specific term, sufficiently long to enable the individual to demonstrate his professional compe-

tence and how he contributes to departmental objectives. An initial appointment for two years could be followed by one or two additional two year appointments. In no case should an individual be continued on the departmental faculty beyond six years unless he has demonstrated competence and the department is willing to appoint him to a position with tenure. Faculty with tenure are almost impossible to remove so tenured appointment should be made with great care. It is better to make use of temporary faculty appointments than to give a tenure to faculty of doubtful competence.

Promotion should be based on demonstrated merit in teaching and research. Age, length of service and other non-professional factors should be given little attention. Evaluation of the candidate's merit for promotion should be made by the chairman based on the advice of a committee appointed by him. Promotion is one method of recognizing the competence of faculty members and their contribution to the objectives of the department. Salary is another method. A flexible salary scale which permits wide ranges of salary within ranks and overlapping of salary floors and ceilings between ranks permits recognition of professional contributions on the part of faculty who have not met all criteria for advancement in rank.

Appointments to junior faculty positions should carry with them provisions for support of their professional activity. Specifically, funds should be available for purchase of equipment and supplies. Clerical and technician support should be provided to an adequate degree and graduate students should be available for support of the instructional and research programme. A personal office and adequate laboratory facilities are essential. To make faculty appointments without provision for these needs is placing serious obstacles in the path of the individual's ultimate development as a productive faculty member.

There is a direct correlation between the financial resources of a department of chemistry and the effectiveness in instruction and productivity in research of that department. Salaries account for 75 to 90 per cent of the total budget of departments of chemistry in the U.S.A. The remaining 10 to 25 per cent of the budget buys supplies, services and equipment and provides for travel, visiting scientists and special needs. Generally speaking, the larger the percentage of the budget devoted to salaries the *poorer* will be the educational and research programmes of the department. This relationship results from the fact that salaries are given priority over other requirements of a department—often with disastrous results. Representatives from the U.S.A. remember the difficulties of Parsons College as an extreme example of the effect of high salaries without accompanying financial support for instruction and research.

A more common occurrence is that departments blessed with adequate budgets are able to provide excellent salary for their excellent faculty and have 20 to 25 per cent of their budget remaining for support of instruction and research. Departments which are cursed with inadequate budgets devote 85 to 95 per cent of the budget to salaries which are probably not competitive and have remaining inadequate funds to support a viable programme of instruction and research. The likelihood of attracting top-quality faculty under those conditions is small.

The department chairman is the chief strategist in budget construction and allocation. No aspect of departmental operation is more important

than budget preparation. In the ultimate analysis all activities of the department depend on the adequacy of the budget. A department chairman is well-advised to devote much attention to understanding exactly how budgetary allocations are handled in his university. Since this factor varies so much between countries represented at this Conference I will comment only briefly on experiences which would be representative for state universities in the U.S.A. I will make a few generally applicable comments on budget construction and allocation.

A department chairman must assess the financial needs of his department on the basis of specific instructional and research programmes. If new or expanded programmes are considered desirable by the faculty, they should be proposed and documented in much greater detail than is required for ongoing programmes. The department chairman should acquaint the central administration with plans for new programmes far in advance of budget deadlines so that time is available for clarification of details and for persuasion on an informal basis.

In most universities the facts are that salary increase and allowance for inflated costs of supplies make up the greater portion of budget increase. For the department of chemistry to obtain a budget based on need rather than inflationary increments, the chairman must construct a budget in terms of some predetermined units of production which are meaningful to whatever group is responsible for budgetary allocation to departments.

Support staff, such as an administrative assistant for the chairman, clerks and technicians of various sorts for the faculty can be justified on the basis of a combination of the number of faculty and graduate students and the complexity of the programmes in which the department is involved, e.g. special laboratories, institutes, training programmes and development of new curricula.

Graduate teaching assistants' requirements can be tied to the number of students in laboratory courses. Equipment and supplies needs are directly related to the number of student credit hours of laboratory work. Travel budget is related to the number of faculty actively engaged in professionally productive activities. Research instrumentation usually must be justified on an instrument by instrument basis.

It is axiomatic that chemistry professors have unlimited needs and insatiable demands for all manner of support for instructional and research programmes. Equally true is the limited availability of funds within a university. In order to achieve a satisfactory degree of compatibility between financial resources and needs, a chemistry department must devote attention and skill to its internal organization and to budgetary management. Financial resources are translated into educational programmes—both instructional and research—and the department with an effective organization will bring about the translation in the best possible manner.