

Secretary General's Report

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As reported in the article on pp. 163, the IUPAC Bureau has approved a policy that will phase in major changes in the organization and management of our scientific work. In this column I would like to provide some information on the discussions that led to the Bureau decision and to answer some questions that have been raised by many members of IUPAC bodies.

Bureau discussion. Every Member of the Bureau recognized the importance of this decision for the Union as it positions itself for the next decade—indeed, the next century. The final vote, 20–0, with two abstentions, came only after a careful analysis of the programme and consideration of its long-range impact. During the last few years, there have been extensive discussions of the reasons why the Union must make major changes in its operations to ensure its survival and enhance its role in world-wide chemistry. The proposals made by the *ad hoc* Strategy Development and Implementation Committee after a year's study and debate, provided an integrated programme to effect the necessary changes.

The SDIC recommendations were widely publicized and elicited many comments, both within and outside the Union. In particular, several Division Presidents received extensive input from members of their Divisions who will initially be the most affected by many of the changes. There was widespread support for most or all aspects of the SDIC programme, but also a number of strong criticisms and suggestions for specific alterations in the proposals.

Future role of Commissions. Probably the most contentious issue was the recommendation by the Bureau that in 1999, Council exercise its responsibility under Bylaw 4.302 to decide not to continue any existing Commission beyond the end of 2001. Several very reasonable questions have been widely asked: (i) 'Since the work produced by most Commissions, Subcommittees and Working Parties has generally been highly regarded, why should the 37 Commissions not be continued indefinitely?', (ii) 'Most ideas for new projects have emanated in one way or another from Commissions. If they are not continued, where will new projects originate?', (iii) 'Without continuing Commissions, who will carry out projects (if good ideas can somehow be generated elsewhere)?', (iv) 'If there are few or no Commissions, how will National Representatives be accommodated?', (v) 'Without a large cadre of Commission members, who will comprise the membership of the Divisions?', (vi) 'How will members of short-term Task Groups develop the kind



of knowledge about IUPAC and the loyalty to the Union that characterizes many Commission members?'

These are all very important issues. Let me try to explain the reasoning behind the SDIC recommendations regarding Commissions, which were endorsed by the Executive Committee and now approved by the Bureau. First, the organizational changes recommended by the SDIC are not intended to demean the accomplishments of the members of Commissions or any other IUPAC bodies, nor should the discontinuance of a Commission be interpreted as indicating lack of support for the discipline or special area that it represents. If individuals and/or a group of chemists are carrying out valuable work under the current organizational framework, there is no *a priori* reason why they cannot carry out equally good (perhaps even more effective!) work under a number of other organizational arrangements. There is nothing essential or unique about our current Commission structure, but it does have a long history and some disadvantages, as well as advantages.

According to the *History of IUPAC, 1919–1987*, Commissions originated in 1922, and for over 25 years a relatively small number of Commissions (of the order of 10) were established, discontinued, and re-established in modified form. The names of some of the original Commissions suggest that they were forerunners of some current Commissions [e.g. Chemical Elements (including Atomic Weights), Reform of Nomenclature, Thermochemical Standards, Preservation of Foodstuffs]. After World War II, chemistry expanded rapidly,

and chemists thought of themselves primarily as specializing in one branch of the field. As a result, in about 1950, IUPAC formed Sections on Physical, Inorganic, Organic, Biological, Analytical and Applied Chemistry, with the existing Commissions assigned to Sections, in some instances only one Commission in a Section. However, the Sections were allowed to form additional Commissions and predictably they did, usually by slicing the discipline into subspecialties. By 1955 a total of 33 Commissions were in existence—many of them continuing to the present. Certainly there have been many changes, but the overall structure has been relatively static for 45 years, in spite of continuing pleas from IUPAC Presidents for more flexibility (including Arne Tiselius, already in 1955; Jacques Bénard in 1973; Heini Zollinger in 1981; and Alan Bard in 1993).

Future division programmes. Now, back to the present. Over the last three years a major initiative of the IUPAC Officers, as endorsed by the Bureau, has been to articulate the long-range mission and goals of the Union and, with the help of the SDIC, to develop a Strategic Plan. This gives a sense of direction to the Union as a whole, but it is only a framework and must be 'fleshed out' in practical terms. So far as IUPAC's scientific work is concerned, no single committee—not the Bureau, not the Executive Committee, not the SDIC—can provide expertise over all chemistry. Moreover, no one in IUPAC wants a 'top-down' directed programme; it is not likely to be very good, and it certainly won't work in a volunteer organization. What we need is to have each of the seven Divisions develop its own coherent programme and to have Divisions jointly determine how they can best address many increasingly important interdisciplinary fields. Each Division needs to take a fresh look at its part of chemistry, without the need to accommodate and/or justify a set of pre-existing Commissions. Permanent Commissions, by their existence, tend to emphasize fragmentation and specialization in chemistry, rather than a coherent whole.

During the next two years, it is anticipated that each Division will consider its future directions—and IUPAC's overall future scientific directions—in a thorough and objective manner. Current Commission chairmen can and should play a major role in this process in their capacities as experts in specific aspects of chemistry, not as advocates for maintaining the structure as it currently exists. We also need the participation of leading scientists throughout the world who are not currently directly involved in IUPAC work but who can help the Union decide on future directions. In some instances a Division, or several Divisions acting together, might well set up *ad hoc* planning and strategy groups or even convene a small working conference to elicit broad advice on how IUPAC programmes can best meet the world's scientific needs in particular areas.

In developing their programmes, Division Committees will have a range of available options. They may appoint *ad hoc* advisory, strategy or planning groups as needed. They may appoint Task Groups to carry out individual projects, which can cover a variety of topics. They may propose augmenting the Division Committee if needed, to ensure continuity and oversight in particular programmes. If a Division Committee believes that a particular area requires a longer term Commission (for example, to develop a programme in a new area of chemistry), it may propose the creation of such a Commission, with a well defined mandate and a termination date. Money, rather than the number of Titular Members, will be the principal resource allocated to Divisions and will be used by Division Committees to support their projects, to obtain advice and to manage their programmes. I do not know what the ultimate mix will be, but I hope that each Division will take advantage of the flexibility and opportunities that will be available under the new system.

A project-driven system. What about ideas for projects and people to serve on Task Groups? Over the next three years, I expect that very many projects will be generated in the existing Commissions, but we will also reach out to the entire chemistry community for specific proposals for projects. I believe that some proposals will eventually come from organized groups, such as National Adhering Organizations, national chemical societies and regional federations, and industry groups. However, most will arise, as they do now, from interested groups of scientists, who discover in the course of their work areas to which IUPAC should contribute. We will make positive efforts to solicit ideas at conferences and symposia and from journal editors. By 1 January 1999 we expect to have a mechanism in place to insure that each proposal is subjected to a critical evaluation; if it is approved, the necessary funding can be made available immediately—not at the beginning of the next biennium, as has usually been true in the past. We will provide more details on the evaluation process at a later date, and Divisions will make arrangements to phase in this procedure. Some Divisions will probably find only small changes in the way projects are evaluated, but I firmly believe that this uniform project-driven system will provide very significant advantages in initiating, managing and completing high quality scientific efforts. Meanwhile, of course, existing projects will continue, and many will be completed during the next three years. The Executive Summary of the report by the Committee on Project Evaluation Criteria can found on the next page.

As is true now, the people who work on projects are those who have the necessary expertise and also the interest to take on and pursue the job. Individuals who are currently members of Commissions, Subcommit-

tees and Working Parties meet these criteria, and will undoubtedly be heavily represented on Task Groups, but other scientists who do not necessarily want to make a long-term commitment to IUPAC can and should participate in Task Groups in line with their interests and expertise.

IUPAC's human capital. The membership of Divisions continues in its present form to the end of 2001, and National Representatives will continue on Commissions during this transition period. The Bureau has not yet decided how best to ensure the continuation of viable Division memberships, and precisely what recommendations to make to Council in 2001 for changes in Bylaws, but there are a several options to consider as we gain experience during the next three years. The new structure of Division Committees allows for a limited number of National Representatives, and we will welcome widespread participation on Task Groups from all countries. However, we must consider additional possibilities to ensure a very wide participation from just as many countries as is feasible. I will be in contact with NAOs regarding these issues.

One very important mechanism for maintaining contact with a large group of people who are interested in IUPAC is the Fellows Programme, established by Council in 1997. Everyone who completes service on an IUPAC Commission, Committee, Subcommittee, Working Party or Task Group is eligible for appointment as a Fellow. Of course, not everyone is interested in continuing contact with the Union, but our experience so far in 1998 is that most recently 'retired' IUPAC members welcome the opportunity. With electronic communication methods, it is easy and relatively inexpensive to provide information on IUPAC programmes and to solicit advice and comments from Fellows. After 2001, we should have over 1000 Fellows, and I anticipate that a signifi-

cant fraction of future Task Group members will continue involvement with IUPAC.

Problems solved and continuing issues. During the two months before the Bureau meeting, I met individually with several Division Presidents and Vice-Presidents and corresponded extensively with others, in an effort to understand the potential problems that each foresaw in implementing the SDIC recommendations and to develop with them specific ways of overcoming the difficulties. Just prior to the Bureau meeting, the Division Presidents held their annual meeting with the Secretary General, devoted almost exclusively to a joint discussion of the SDIC proposals. In particular, we tried to design procedures by which we can guarantee the continuity of IUPAC's important work and ensure the continued recruitment of talented scientists who volunteer to carry out this work. In the end, as the Bureau vote indicates, there was almost unanimous agreement that this programme should be implemented. However, it was also clearly recognized that not all problems are solved and that all of us in the Union must continue to address the issues of implementation during the three-year period before the new system becomes fully effective.

I have had an opportunity to see many of the very thoughtful comments submitted by members of various IUPAC Commissions and Committees, and my own views have been significantly modified as a result. I have tried here to respond to some points and to explain the underlying purpose of what sometimes may initially appear to be arbitrary or unnecessary changes in traditional modes of organization and operation within IUPAC. There are many other aspects of the new system that can be explored further. I invite questions and suggestions, preferably by email, directly <tbecker@nih.gov> or via the Secretariat <secretariat@iupac.org>.