
IUPAC Forum

Young Observer Programs: Getting New Experts Involved in IUPAC

by E. P. Przybylowicz

Any scientific discipline, if it plans to remain vibrant and innovative, must explore ways to renew itself as it expands into new areas and develops new techniques. Traditionally, IUPAC has depended on its commission structure to bring new talent into the fold. Because commissions had relatively long lifetimes, they could include new experts on their commission projects either as observers or working members.

Given the recent changes in organizational structure, however, the process of bringing new expertise into

IUPAC will, itself, face new challenges. In the true spirit of experimentation, the organization must try different approaches to involve new experts in IUPAC.

An Innovative Way to Seek Innovative Scientists

In the past, several countries have made use of what is called the Young Observer program. It is typically structured at the country level by the National Adhering Organization and differs somewhat from country to country. Believed to have been first intro-



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duced in the United Kingdom some years ago, it has most recently been actively used by Japan and the United States.

At the recent General Assembly in Brisbane, Japan had four scientists under the age of 45 who were selected by the Japan National Committee for Chemistry of the Science Council of Japan. This program has been in existence for ten years and operates with a fund provided by the Japanese Company Associates. This fund provided approximately USD 2000 toward travel and subsistence expenses for the Japanese scientists.

For the United States, the 2001 Young Observer program was supported through grants from the National Science Foundation, Research Corporation (a non-profit organization), the American Chemical Society, and the U.S. industrial companies that constitute IUPAC's Company Associates.

The U.S. Young Observers and IUPAC

A total of 13 Young Observers (four women and nine men) were selected from the United States to participate at the most recent General Assembly in Brisbane in July 2001, and to experience the global efforts undertaken by the Union. They represented a broad array of expertise and professional backgrounds: macromolecules, analytical, environmental, teaching of chemistry, inorganic, colloidal, physical, medicinal, organic, and nomenclature. Two were from industry, two from government laboratories, and the remainder from academia.

The Young Observers indicated general satisfaction with their experience. Perhaps more importantly, these Young Observers gained awareness of the important role that IUPAC plays (and *must continue* to play) as an international organization for the worldwide chemistry enterprise. Generally, they were pleased with the structure of the program (see sidebar). Many pointed out the value of the orientation program as well as the "mentors" that were assigned to them as being particularly helpful in their getting the most out of the meetings they attended.

Overall, the Young Observers were impressed with the operations of IUPAC. As with any meeting there were good and not-so-good experiences. A number of useful observations were suggested to help IUPAC improve its operations. These points will be summarized in a report that will be sent to U.S. National Committee members, the sponsors of the U.S. Young Observer Program, and the Executive Committee of IUPAC. The

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report will also be used for soliciting funds to support a similar program at the General Assembly in Ottawa.

A number of the Young Observers indicated a willingness and an interest to continue their participation in IUPAC. Several were assigned to task groups in Brisbane and will be working with these IUPAC bodies as a followup to the General Assembly.

What the Young Observers Have to Say

A sample of quotes from some of the Young Observers

reports gives a flavor of their impressions and experiences:

"Overall, I was favorably impressed with the things that I saw and participated in while at the IUPAC meeting. The most significant impression was that IUPAC provides a vehicle to collaborate with scientists from other countries on projects important to chemistry. Most collaborative efforts by chemists are research-based projects with few collaborators; however, the IUPAC projects provide the opportunity to interact with a number of chemists on issues that have the potential for impacting larger areas of chemistry and science in general."

"IUPAC should narrow its mission to reflect its limited financial resources. The IUPAC goals (list) is unrealistically long and can never be fulfilled with IUPAC's current funds. Unless IUPAC can dramatically increasing its funding level, it should focus on a subset of those goals and de-emphasize the others."

"This was one of the most interesting and invigorating scientific experiences of my career. I really enjoyed the opportunity to meet and interact with other scientists from all over the world, and the discussions that I became involved in were among the most intellectually stimulating I have experienced."

"The program for the young observers was very well organized, and the communications prior to the meeting were quite effective as were the introductory meeting and reception. I was very fortunate to have been assigned a really terrific mentor. . . ."

"There can be no question of the value of these meetings both from the technical and the international cooperation perspective. IUPAC offers a unique forum for the exchange of views on issues of concern to chemists around the world. The mix of participants on the Medicinal Chemistry Section Committee represented most regions of the world and a good mix of participants from both industrial and developing nations. While I have attended several international meetings the mix of people I encountered here was far more nation-

The Structure of the U.S. Young Observer Program

The program consists of the following discrete steps:

1. The decision by the U.S. NAO Committee for IUPAC, i.e. the U.S. National Committee for IUPAC-USNC under the auspices of the National Academy of Sciences, to have a Young Observer program was taken about 18 months prior to the upcoming General Assembly.
2. The program is intended to provide several things:
 - Selection of chemists or chemical engineers under 45 who were leaders in their field and showed an interest in establishing international connections and involvement in IUPAC.
 - Partial financial support to attend the General Assembly (USD 2000). (This figure varied for past General Assemblies, depending on support availability and the General Assembly location.)
 - Contact with appropriate IUPAC chairpersons to introduce the Young Observers and request permission to attend their meeting.
 - Identification of a mentor for the Young Observers who works with them before the General Assembly, sends them material relevant to their interests, and generally meets with the Young Observers several times during the General Assembly.
 - Orientation for the Young Observers as a group by members of the USNC at the meeting site prior to their attending meetings.
3. The program requires that each applicant:
 - Provide a rationale of why the applicant wishes to attend an IUPAC General Assembly and an indication of interest areas among the specific meetings being held at the General Assembly.
 - File a report after attending the General Assembly giving their candid impressions of the meeting. These reports have been very useful in pointing out areas of strengths and weaknesses of the Young Observer program, as well as some observations about IUPAC and its operations.
4. A subcommittee of the USNC handles the funding and publicity, receives and judges applications, and makes the selection of Young Observers to be recommended to the full USNC for approval.
5. Since the selection process is competitive, decisions are made on the basis of the written application.
6. Funding for the program is raised in parallel to the publicity and application steps. The level of funding obtained determines how many Young Observers can be selected. Funding is raised from industry, foundations, and government agencies. Summary reports of previous Young Observer programs are used to "sell" the program to the funding agencies.
7. Final selection of the Young Observers for the General Assembly is made about six months prior to the General Assembly. This allows time for the contacts to be made with committee chairpersons to ensure that the selection of meetings to attend will work out. Also during this six-month period, mentors are identified and contacted. Much of this work is done through the staff office for the USNC.



ally diverse than I had previously encountered at ACS meetings, or other smaller special interest meetings.”

Maintaining the Enthusiasm

The enthusiasm for the work of IUPAC demonstrated by the Young Observers is something that we need to channel into effective work for IUPAC on meaningful projects. With the new organizational structure of IUPAC, we must find ways to involve these new experts.

The Young Observers program has been run largely by national organizations. Mechanisms need to be considered that will encourage involvement from *all* member countries of IUPAC, not just the larger countries. Additionally, Division Committees need to consider how best to involve these enthusiastic young scientists,

should the program continue to increase. Perhaps Young Observers should be given an opportunity to participate in more than General Assembly meetings.

In summary, where the program has been used in the past, it has been successful in involving new experts in IUPAC. The Union and the National Adhering Organizations should be challenged now by how best to shape this successful program to serve its continuing need to involve new experts in the organization.

E. P. Przybylowicz is Chairman of the U.S. National Committee for IUPAC.