

## The IUPAC Project System: Evaluation of Completed Projects

by Ron D. Weir



**I**n 2000, IUPAC introduced a new project system to encourage projects that support the aims and objectives of the organization and allow any scientist or engineer worldwide to participate in IUPAC-funded activities. Under the new system, the protocol for submitting a project proposal is simple and streamlined. In the May-June 2006

*CI*, Gus Somsen<sup>1</sup> described succinctly the why, how, when, and where of the process. In this column, I will review what mechanisms shall be put in place to evaluate each activity initiated under the project system.

Regardless of the source of funding for any expenditure, whether we are using our own money or that of someone else, it is normal and appropriate to ask the question "Was value for money achieved?" Because IUPAC is a responsible organization that relies on funding from national governments—through their chemical societies and institutions—it has put in place an Evaluation Committee whose tasks include (i) determining the appropriate criteria for retrospective evaluation of each project; (ii) evaluating all projects for conformance to plan; (iii) evaluating the impact of projects on the relevant chemical community; (iv) reporting to the IUPAC Bureau in writing annually on the results of the evaluation; and (v) informing, after discussion in the Bureau, the National Adhering Organizations about the completed evaluations.

Since the new project system was implemented about six years ago, around 200 projects have been completed. For many of these projects there has been a short time interval since their completion—perhaps too short in some cases to assess a meaningful impact. Readers can easily read about the many IUPAC projects underway, as well as those already completed, at <[www.iupac.org/projects](http://www.iupac.org/projects)>. The types of projects include recom-

mendations, technical reports, policy and strategy documents, nomenclature, reference data, and books.

The main challenge for the Evaluation Committee is determining the appropriate criteria for retrospective evaluation of each project. For some types of projects, the number of citations quoted in the open literature provides one measure of the impact. The citation is the natural criterion for those projects that fall within the reference data category since papers and publications that use these data make the appropriate reference. One example of measurable impact is from the project Evaluated Kinetic Data for Atmospheric Chemistry, for which the huge quantity of data have been compiled within a database accessed via either the IUPAC website or that of the University of Cambridge in the UK (see Tools of the Trade on p. 15). The literature citations for this project currently number close to 2 000, with an additional 6 500 hits on the database per week. The extraordinary interest in this project is due to the concern worldwide about climate change and the search to obtain associated quantitative data that may influence policies and actions by national governments and the United Nations.

Projects in the policy/strategy category appear, superficially, to be less likely to generate citations. For example, it is interesting to note that one of these projects, the Impact of Scientific Weapons Developments on the Chemical Weapons Convention, has generated 30 citations. The printed outcome was a special issue of the IUPAC journal *Pure and Applied Chemistry* (Vol 74, No 12, pp. 2229-2352 [2002]).


Nomenclature projects *or alike* do not generate citations, which is an expected outcome. For example, the IUPAC Green Book, *Quantities, Units and Symbols in Physical Chemistry*, sets out recommendations and rules which are in use worldwide. Such standards are adopted by many international journals and textbooks, in university instruction, and for general research, and yet

it is understood that they are used without reference. The same is true for the nomenclature conventions captured in IUPAC's other "color" books: organic (blue book), inorganic (red book), chemical terminology (gold book), macromolecules (purple), analytical (orange), biochemical (white), and clinical laboratory science (silver).

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It is evident that a single criterion cannot be used to provide the evaluations. A broader index system needs to be devised and the Evaluation Committee is in the process of providing this to the Bureau. By way of anecdotes, as we attend international scientific meetings, many of us receive positive feedback about IUPAC projects such as Green Chemistry in Africa, the postgraduate course in polymer science, or yet the short course in polymer characterization or the Inter-Union project on education. For other projects, we receive meagre formal feedback, or even the remark that such or such reports or recommendations were not known.

The impact made by each projects may take many years to bear fruit and even then it is not clear what the best quantitative measures are to assess the

impact. The challenge for the Evaluation Committee is clear and our plan is have a report in time for the next General Assembly in Torino, Italy, in August 2007. Input and suggestions for the Evaluation Committee are welcome at <weirr@rmc.ca>. 

#### References

1. G. Somsen, "The IUPAC Project System Revisited," *Chemistry International* 28(3), 2-3, 2006.

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