Pure and Applied Chemistry Special Topic Series

Danielle Fauque and James Bull on the special issues of PAC from 1996 to 2012

In 1999, James Bull was invited to become editor for the scientific journal of IUPAC, *Pure and Applied Chemistry (PAC)* and specifically for *Special Topics*, a series originally conceived as a way of promoting IUPAC engagement with topics of social relevance. As editor of the series and later of *PAC*, James Bull worked to raise the level of awareness of the issues and in turn draw attention to the work of the Union. In the course of my own research on the history of IUPAC, I, Danielle Fauque, was intrigued by the series, which was published between 1996 and 2012 [1]. It became the subject of several lengthy electronic exchanges with James Bull. The interest of the exchanges was so evident that a publication in *CI* seemed appropriate.

Danielle Fauque (DF): James, in order to provide context for discussing our subject of the Special Topic project, can you briefly outline the origins and earlier history of PAC?

James Bull (JB): *Pure and Applied Chemistry* was launched in 1960 as the official publication of IUPAC, primarily to improve readership access to Reports and Recommendations arising from the work of IUPAC bodies. The foreword and introductory paper of the first issue [2], provide some insight into the founding policy, and included qualified provision for selected publication coverage of “reports of meetings and symposia.” This feature grew rapidly into a popular and eventually obligatory outlet for works based upon main lectures of a growing number of international

conferences sponsored by the Union, and soon became the predominant component of *PAC* coverage.

DF: During the 90s, IUPAC was actively engaged in strategic planning and you received an invitation in 1998 to undertake a special project for *PAC*. Remind us about the circumstances and purpose of this undertaking.

JB: The subject came up during a 1998 visit to South Africa by IUPAC President Joshua Jortner and Secretary General Edwin D. (Ted) Becker. At the time, I had recently retired from active work on IUPAC Commissions and from 20 years as editor of the *South Africa Journal of Chemistry*, so the challenge to broaden the scope of *PAC* publication coverage was timely. Accordingly, I commenced as editor for *Special Topics* in 1999, with a mandate to facilitate projects already in progress and the freedom to interpret the concept as I chose, in consultation with Union colleagues and Divisional representatives. New and emerging frontiers of chemical sciences and interdisciplinary interfaces were recognized as appropriate target areas, particularly those on the fringe of or beyond the scope of publication outputs from established conference series at that time. In that respect, *Special Topics* were intended to extend rather than change the distinctive publication ethos of *PAC*.

DF: Can you explain how the *Special Topics* project was expected to enhance the stature of *PAC*?

JB: During the formative years of *PAC* coverage of conference proceedings, editorial initiative and oversight were secondary to capturing a representative record of the main scientific proceedings of such events. In fact, IUPAC sponsorship became conditional upon an expectation that plenary presenters would offer manuscripts, subject only to editorial oversight by conference organizers, rather than conventional peer review and meaningful editorial intervention.

By the 90s, global growth of the international conference circuit also saw growing reluctance by prominent presenters to comply with *PAC* publication commitments as a condition of accepting invitations to IUPAC sponsored events. *PAC* publication schedules also deteriorated, and I had the impression that the *Special Topics* project was a first attempt to reinvigorate the journal with fresh perspectives on new and emerging areas of chemical sciences.

A guiding prerequisite that evolved was to

James Bull (left) with IUPAC Treasurer Christoph Buxtorf and his wife, cheering for the health of PAC at the IUPAC General Assembly in Torino, Italy in August 2007.

concentrate on themed collections of short critical reviews rather than disclosure of hitherto unpublished results. Early attempts to augment such collections of works with stand-alone feature articles, by invitation to individual international authorities, were less successful. A vitally important condition from the outset was to subject all such works to conventional peer review by at least two independent and anonymous subject experts. In practice, would-be authors were also invited to nominate preferred reviewers [3].

DF: Was the decision to explore the Special Topics concept influenced by earlier IUPAC efforts to address societal issues relating to chemistry through publication projects?

JB: The idea of ‘Special Topics’ may well have been inspired by publication of a so-called White Book on Chlorine in 1996 [4], as well as invited collections of works on ‘Environmental Oestrogens’ (1998) [5] and ‘Oil Spill Countermeasures’ (1999) [6] that preceded formal adoption of the concept. These projects arose from initiatives within IUPAC structures to generate single-issue *PAC* collections, and were indeed motivated by societal relevance and public interest. Although these factors were not emphasized as prerequisites in the formalized project, they naturally emerged as a welcome feature of many of the Special Topics collections that were subsequently undertaken.

DF: Did formal inauguration of the Special Topics project meet expectations?

JB: At the outset, collected works arising from *ad hoc* projects and workshops provided auspicious beginnings, since “Nanostructured Materials” [7] and “Green Chemistry” [8] were very well supported by manuscripts from numbers of leading authorities. Both collections were published during 2000, and remained amongst citation frontrunners for this volume over several years thereafter. The themes were revisited in Special Topic sequels, and Green Chemistry was adopted as a regular IUPAC-sponsored conference series, starting in 2006. Homage is due to the memory of Kenneth Seddon, whose prophetic paper ‘Ionic liquids, Green solvents for the future’ [9] in the 2000 collection accumulated an unchallenged record of 838 citations by April 2011 [10].

The Special Topic approach was also adopted in 2002 to launch Young Chemists’ Prize Collections, a feature that became a particularly rewarding (and enduring) annual series of invited works by winners of an

international essay competition hosted by IUPAC [11]. Notably, the authors participated enthusiastically, and several works have since attracted exceptional citation records. This Special Topic series marked the passage of 2011 with a very fine celebratory compilation entitled ‘Perspectives and Challenges for the International Year of Chemistry’, in which no less than 17 of the 37 prize-winners of preceding years participated [12]. Within a year, this collection showed early evidence of topicality and the promise of significant citation potential. In summary, the Young Chemists series turned out to be a perfect vehicle for recognising and promoting younger talent, and has also demonstrated how citation records furnish essential aids to quality control and project prioritization.

In summary, the Special Topics concept was handsomely vindicated in practice, and the early successes played a decisive role in shaping and refining ensuing strategic changes in overall *PAC* publication policy and practice.

DF: Tell us more about this strategic change in publication policy, and how it was managed.

JB: The Special Topics project continued its early progress with a number of specialized topics, but longer term exploration of future themes was paused after a Conference Policy Development Committee was launched during the Brisbane General Assembly in 2001 [13]. This group met in London during 2002 and resolved to adopt a new editorial strategy for *PAC*. I was appointed as Scientific Editor in 2003, with responsibility for all content other than Reports and Recommendations.

Although the concept of Special Topics was retained, a larger issue that emerged was to apply self-consistent criteria to all Conference and Special Topic content of *PAC*, specifically to ensure uniform standards of conventional peer review and scientifically rigorous editorial oversight of content throughout. The ensuing scope for Special Topic potential was broadened to include occasional in-depth coverage of selected mainstream and regular IUPAC sponsored series as well as deliberately selected one-off projects. The vision was to enhance the reputation of *PAC* as a distinctive multidisciplinary journal devoted to all aspects of pure and applied chemistry, and its implementation was based upon traditional invitations to main lecturers at international IUPAC sponsored events as well as selected interest groups, to submit short critical reviews based upon their areas of specialization. An

implicit feature of the policy was to ensure thematic coherence in each issue by publishing discrete collections of such works and giving particular prominence to Special Topics content.

DF: How did these plans work out in practice, and how were the outcomes evaluated?

JB: These new policies and practices were implemented with effect from 2003, and online submission, peer review and revision, and management of manuscripts were phased in during the following two years. An international panel of willing and reputable reviewers was built up over time, and was complemented by author nominations. The design and implementation of a *PAC* website made important progress toward the ideal of offering a navigable and interactive open-access system, and an Editorial Advisory Board was revived as a necessary interface with Divisional structures of the Union. Over the ensuing years to 2012, Conference and Special Topic projects occupied about 80 % of *PAC* pages and generated more than 90 % of all citations. Established Conference series became natural candidates for occasional Special Topic status, and many familiar topics such as Organometallics directed towards Organic Synthesis, Novel Aromatic Compounds, Physical-Organic Chemistry, and Natural Products and Biodiversity, enjoyed high levels of support from prominent authorship and dominated the annual citation tallies.

DF: Do you have any concluding thoughts on what was achieved during your editorial years?

JB: Of course, there were occasional shortcomings and disappointments, and *PAC* could not aspire to represent all the disciplines within the IUPAC Conference calendar equitably or to maintain consistently high standards in all projects, but core coverage displayed steady improvements in bibliometric data throughout this period. Although such data are obviously not the only criteria of success, their absence would surely have denoted failure and/or irrelevance. Many projects enjoyed enthusiastic support from project organizers and authors, and expedited online publication of papers prior to print was widely appreciated. The open-access online resource was implemented with a minimal non-subscriber embargo for conference works, and was of incalculable reputational worth to the Union at the time.

A detailed account of the period from 1999 to 2012 is captured in my annual reports submitted to the Committee for Printed and Electronic Publications

(CPEP) to 2013, accompanied from 2004 by citation surveys [14]. These documents were also routinely issued to serving members of the Editorial Advisory Board (EAB). The more racy features include serialized accounts of trials and triumphs in pursuit and execution of each *PAC* project, and candid evaluation of the overall status and progress of the Journal.

The oversight roles of CPEP and the EAB were important during the years under review, but it was disappointing to experience reactive or even inadequately considered outcomes to some of the important issues of principle as well as practice toward the end of my period of editorship. *PAC* is a visible and priceless archival asset of the Union. It has long fulfilled its important obligation to facilitate access to knowledge generated by and for the international chemistry community. The 'old' and now-passive *PAC* website survives as an exemplary and readily navigable open-access archive of all *PAC* content between 1960 and 2012. Perhaps it serves also as a salutary reminder of lessons to be learned from the past, and opportunities to reflect on the attendant challenges of safeguarding Union responsibilities toward the international community. 🏠

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