

Promotion of Chemical Research Transcends National Boundaries

In the autumn of 1999, nine European national research promotion organisations took the unprecedented step of soliciting joint, transnational applications for chemical research grants. The nine also agreed upon joint evaluation of the applications, while maintaining national financing of the research. The role of this initiative by the Chairmen of European Research Councils' Chemistry Committees (CERC3) is specifically to supplement - and not to challenge - existing programmes of the European Union (EU), the European Science Foundation (ESF) and the European Committee on Science and Technology (COST). Thirteen transnational application packages have been submitted so far by 50 working groups from eight European countries. The research is to be conducted in the highly topical fields "Topological Stereochemistry, Topological Chirality" and "Molecules at Complex Surfaces: Bond Forming, Bond Breaking and Dynamics".

Those who consider this news trivial should recall how very problematic it is objectively to assess cooperation projects that cross national boundaries and cannot be compassed within EU networks. Natural scientists working at European universities and public research institutes have always cultivated very good and intensive scientific contact with their foreign colleagues. They not only meet at conferences to exchange information and experience but often work jointly and successfully on concrete scientific issues, as the professional journals or the Max Planck research prizes awarded in recent years clearly demonstrate. It is the more regrettable that there has been to date hardly any opportunity for these projects to apply for funding jointly.

For example, if a German scientist and a British scientist plan to combine their intellectual resources in a joint project for pure research, for which they will incur not only travel expenses but will also require funding for staff and materials, they can turn neither to the EU, the ESF, nor COST. The partners must, instead, submit separate applications for sponsorship to their respective national research councils - the DFG or the EPSRC. Each application must describe the individual scientist's contribution to the cooperation and particular financial needs. Evaluation of this application segment

is carried out according to diverse national regulations by diverse experts and without feedback among the research councils. It is a lucky day indeed when the respective national committees actually do end up approving a bi-national joint project requiring intensive interchange and a high degree of coordination, and thus permit the partners to implement their research project efficiently. When three or more partners from different countries wish to cooperate, present methods virtually prohibit any sensible form of evaluation.

Eliminating Obstacles to Scientific Cooperation

The somewhat unwieldy acronym "CERC3" stands for an informal association of grant-review committee members and experts from the national research organisations of EU member states, who have been trying for eleven years to improve the exchange of information about chemical research in Europe. They have also tried to win over the next generation of scientists to the idea of European integration through »Young Chemists Workshops" organised by the young chemists themselves. DFG Senator Professor Ekkehard Winterfeldt and I have been working on going beyond the exchange of information by removing, one by one, the obstacles to scientific cooperation. At our urging, CERC3 resolved in 1997 to tap transnational chemical research potential by creating a procedure for transnational applications and evaluations based exclusively on scientific quality. With generous financial support from the GDCh, evaluation conferences took place in 1998/1999 in Hannover, Copenhagen and Amsterdam on three fields of chemical research which the national research councils agreed were of particular importance. Outstanding European experts in these fields were invited with the aim of identifying interesting issues that a number of partners from different European countries could pursue more effectively together than individual scientists could on their own. The conference's congenial atmosphere fostered highly focused and efficient discussion, which gave rise to the basic ideas for a number of the applications which are currently pending.

Any kind of jointly coordinated research across national borders can only function if the sometimes considerable differences among national research systems are recognised and surmounted by commonly agreed rules for cooperation. With this in mind, two CERC3 workshops were held in 1997 and 1998 in Rome on the topic "Research Council Assessment/Evaluation Procedures". On the basis of these conferences and after a number of talks to sound out people's opinions, we presented to the CERC3 annual meeting in May 1999 concrete proposals for the formulation and joint evaluation of transnational applications.

Model Projects: Chirality and Surface Chemistry

Nine of the 14 CERC3 member organisations - CNR (Italy), CNRS (France), DFG (Germany), EPSRC (United Kingdom), FCT (Portugal), FWF (Austria), NWO (Netherlands), SNF (Denmark) and SNF (Switzerland) as an associate member - agreed to participate in the joint solicitation of applications in two of the three fields specified by the evaluation conferences and to comply with the evaluation regulations that had been proposed and agreed among the partners. The remaining CERC3 members wish for the time being to wait and see what eventuates from the first announcement and to consider joining in at a later point in time.

It was resolved to employ a single text to be used by all partners inviting chemists in these nine countries to submit joint applications – involving two or three partners from different countries in the fields mentioned above: "Chirality" and "Complex Surfaces". In the interests of optimal administration of the applications, the ceiling was set at five working groups for each joint project. In addition to a general description of the transnational project, the applications were to include, above all, an

explication of the synergy impact on transnational cooperation that might be anticipated as a result of the individual research contributions. Each working group was also to describe its own research plans separately and, in line with the regulations of the national organisations, to provide a detailed rationale for funding requested for staff and materials. The participants in each of the joint applications were to name one of their members as spokesperson.

The spokesperson's research council is assigned coordination of the overall task of assessment with the proviso that the selection of evaluation experts be agreed with the other participating councils. The evaluation experts were advised in a standard letter to confine their judgements of both the joint application packages and the individual applications exclusively to considerations of scientific quality and European "value added". We agreed together that each research council responsible for a national project segment was to have complete freedom of decision concerning the scope and promotion of this project segment, as long as these were consistent with the evaluating experts' vote. All decisions must be made with the proviso that, within the framework of the CERC3 initiative, national project segments do not receive support until promotion has been secured for the other projects essential to the success of the joint project as a whole. Of the 13 transnational application packages, five concern the topic "Chirality" and seven the topic "Surfaces/Heterogeneous Catalysis". German scientists participated in 11 of the application packages at a total volume of DM 3.5 million. On the basis of the international evaluating experts' vote, the DFG has granted appropriations to the amount of DM 1 million for German project segments within five application packages.

It must be openly conceded that the CERC3 announcement soliciting applications and the provision of experts and administrators involved considerable effort and expense. Not all of the applications for project segments were from the outset prepared for evaluation, and it was not possible to impress upon all of the experts that a key criterion for promotion should be a recognisable synergy effect. Nor was it by any means easy to reach a common denominator for project duration and deadlines among the participating research councils.

Summary and Prospects

In sum, however, we were able to establish that the effort was worthwhile and that it did prove possible within the confines of strict joint evaluation of transnational application packages to identify outstanding research projects by first-class scientists, in which the transnational interchange of professional knowledge among the partners led to genuine gains in terms of quality: As Europe grows together, it would be wrong always to look to the EU for solutions; rather, in accord with the EU's Maastricht subsidiarity resolution, the national research councils should be aware of their forte, which is to identify and promote good research – also in association with their European partners. Peter Kind of the European Commission remarked at the latest CERC3 meeting in May 2000 that the Commission views the CERC3 initiative as a positive model: we consider this to be high praise and take it as encouragement to carry on. We at CERC3 will reflect together on how the transnational experiment might be continued and finally extended to all areas of chemistry without formal solicitation of applications.

Until clarity can be established about how to continue, I recommend that all German chemists who are planning together, with one or more European partners, projects which can logically be evaluated only as a single entity contact the DFG, so that individual evaluation solutions can be discussed with the respective CERC3 colleagues. For all priority programmes in chemistry being conducted by CERC3 member organisations, which are customarily open solely to scientists from that country, we in CERC3 have already agreed among ourselves that applications from abroad be accepted and

evaluated on the same terms as national applications, so long as the respective foreign research council is prepared to finance them.

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