

Resume of the international conference Peer Review – Its Present and Future State , Prague 12-13 October 2006.

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In October 2006 EUROHORCs together with ESF and the Czech Science Foundation organized a conference on Peer Review – Its Present and Future State. Almost 150 persons participated in the conference, which attempted to review the contemporary state of the peer review process as it is used in the evaluation of grant applications, the quality of scientific institutions and submitted publications. Although in several contributions the speakers attempted to report about the evaluation of institutions, programs or research units, and in a few cases the topics of the invited reviews were oriented towards peer review in the process of journal publication, the major interest was in examining the strong and weak points of the peer review process for evaluating scientific proposals. As John O'Reilly said in his contribution, "Peer review was introduced in around 1690 as a means of vetting contributions to the Royal Society of London and has since been very widely adopted and has stood the test of time". The participants had a chance to hear reports about the status of the peer review process and its problems from leading representatives of the major research councils or grant agencies from all over the world.

I am not able in the short time of my talk to mention all the contributions, but let me mention at least excerpts from some of them. Graham Stroud from DG Research in Brussels described in detail the process that the Commission uses for evaluating grant proposals within the 6th and 7th Framework Programs. As part of its efforts to improve the proposal evaluation process, the Commission carries out a continuous survey of all the evaluators appointed to examine proposals under the Framework Programs. Separately and in parallel, the Commission also appoints independent observers to oversee most evaluation sessions. These observers are asked to witness the evaluation sessions and provide advice to the Commission on how to improve the process. Dr. Stroud also mentioned that the Commission has introduced a clear procedure for handling complaints about the evaluation process. The new procedure for handling complaints is intended to catch early the very rare cases of errors in the evaluation process and not to give rise to a systematic second chance for rejected proposals or re-evaluation. A request for redress is possible in the grant scheme of the European Research Council; however, a re-evaluation will only be carried out if there is evidence of a shortcoming that affects the quality of the assessment of the proposal. This reminds me of the fact that in the Czech Science Foundation each year, approximately 2-3% of the applicants ask for a re-evaluation of their grant assessment (mostly on the basis of the evaluation reports, which they are allowed to obtain upon request). In our case this problem

is solved by a special Control Committee of the Czech Science Foundation, members of which are elected by the Czech Parliament. The Control Committee handles officially all complaints delivered to the grant agency.

One of the essential contributions of the Prague meeting was presented by Toni Scarpa, Director of the Center for Scientific Review of the US National Institutes of Health in Bethesda. He concentrated on the multiple efforts his office has made to improve the peer review system in NIH. The efforts consist of shortening the review cycle (undoubtedly helped these days by the introduction of an electronic application procedure and evaluation), reducing reviewer burdens by requiring less travel, shortening review meetings and piloting new electronic review platforms. Dr. Scarpa also mentioned other initiatives such as shortening application forms, preparing continuous receipt of applications and identifying new reviewer rewards to increase recruitment. These last initiatives resonate in my mind since discussion about these topics goes on all the time in my country. In the case of the Czech Science Foundation (and many others in the Europe), the application deadline for project proposal is only once a year; all other solutions are impossible because of insufficient administrative apparatus. There are, of course, exceptions of well established and rich agencies such as NIH with three terms in a year or DFG with its continuous acceptance of project proposals. Let me mention in particular that the NIH initiative to improve the rewards of reviewers coincides with actual discussions in our agency in Prague. We are still resisting monetary rewards for our external reviewers, with the exception of travel refunds. Yet most agencies around us pay their reviewers, and this has started to influence the acceptance level of our reviewers, not only domestic reviewers but also from abroad.

Also essential for the information value of the Prague meeting was a paper by Professor Arden Bement, Director of the National Science Foundation, Arlington, USA. Dr. Bement described the main characteristics of the peer review process in the NSF and emphasized that at every point of the process NSF recognizes their responsibility to maintain the highest standards of excellence, accountability, transparency and effectiveness in the grant awarding process. For example, each NSF directorate has an Advisory Committee, composed of respected volunteers from academia and industry. These committees work with NSF management to define the frontiers, choose which research investments to pursue, assess the quality and integrity of NSF program operations, and evaluate the outcomes of NSF-supported research. In addition the NSF convenes Committees of Visitors, comprised of independent scientists, engineers, and educators, to review NSF programs every three to five years. These experts evaluate the integrity and efficiency of the processes used for proposal review and program decision-making. They also assess the quality of the results from NSF investments. These feedbacks, introduced by NSF (and I

already mentioned similar feedbacks run by DG Research) are essential for the quality of the grant agency peer review process and apparently will become, in the future, standard for all grant agencies in the world.

Dr. Bement also mentioned in his talk the NSF approach towards solving one of the common disadvantages and problems of the peer review process – its tendency to suppress risky and fresh ideas in favor of standard and conventional approaches. One mechanism that NSF is using to support novel ideas is the Small Grants for Exploratory Research program. This program permits program officers to make small-scale grants without formal external review. Such grants may support preliminary work on untested and novel ideas, ventures into emerging research, or quick-response research on unanticipated events, such as natural disasters. To some extent a similar idea was introduced by Professor John O'Reilly, Chief Executive Officer of the Engineering and Physical Sciences Research Council, UK. According to him “the areas of higher risk are often where the greatest opportunities are to be found”. Therefore his Council has set up a modest fund for especially adventurous research proposals that represents between 1 and 2% of the total available EPSRC research funds. In response to the first call, they received 600 proposals, a satisfying response for the organizers.

There are several other problems connected with the peer review evaluation of grant proposals. One of them is nepotism and cronyism, particularly present in small countries with a limited number of scientists and therefore also reviewers. It is difficult in such cases to organize, for example, truly independent and neutral panels, since most members may share with others the same institution (e.g. university), may have been previously in contact as members of other committees, scientifically collaborate in the same topic etc. One way to solve this problem is to rely more on foreign external reviewers, to have a rapid turnover in the membership of panels, etc. However, there are no universal solutions, and this was the opinion of several speakers at the conference.

The concluding session of the conference aimed at capturing major issues of the plenary lectures and parallel sessions and providing an opportunity to summarize major outcomes. It has been recognized that instruments such as EUROCORES and EURYI have contributed to the harmonization of the peer review process in Europe. The increasing use of international referees creates a need for more harmonization, using English as a common language of grant proposals starts to be inevitable. Further efforts are needed to harmonize procedures and practices in peer review. Another idea which may need further exploration is the education of reviewers in the tasks they are expected to do. The potential increase in R&D funding in Europe will put new burdens on officers of the funding agencies and research councils. Guidelines for a

minimum set of standards should be developed in order to ensure trust and liability of the peer review process. Grant agencies and research councils in Europe should collaborate more closely, e.g. by sharing their databases of reviewers, or in using each other's review panels. A practical yet hypothetical approach would be to create a common pool of reviewers in Europe. First steps were done in the ESF when performing the evaluation of grant proposals in the program EUROCORES. Electronic tools starts to be more widely used, many of the activities connected with traveling will be replaced in the future by electronic platforms such as teleconferences, videoenhanced discussions and secure Internet discussion boards.

In principle, the Prague conference on peer review was a good starting point to further serious discussions about the advantages and disadvantages of the contemporary evaluation of grant proposals, represented by the Member Forum on peer review. It was also a truly global survey of the status of this process since besides the mentioned contributions, we heard speakers representing the evaluation processes in the EURYI program, EUROCORES, COST, EMBO, the Wellcome Trust and also representatives of research councils and grant agencies from the Far East, i.e. the Japanese Society for the Promotion of Science, the Natural Sciences Foundation of China, KOSEF and the Korean Research Foundation. The conference helped to identify the issues faced by peer review systems today, to raise the awareness of potential critical pitfalls and to exchange experiences on how these are tackled by different organizations.