



Editorial

Collaboration and Competition in Research

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Collaboration and competition are increasing both within and between research organizations, leading to new questions for research management and science policy. Increasing collaboration is reflected by a growing average number of co-authors in all fields (Hicks and Katz, 1996; Wuchty *et al.*, 2007). Sometimes this is seen as a perverse effect of extremely stretched competition, and not so much as collaboration. The more papers a scientist can put his/her name on, the better this is for ones' reputation and career. Power relations may therefore play a role here, and there is a long discussion about field specific norms for correct authorship (Marušić *et al.*, 2011). Nevertheless, competition is generally conceived of as crucial for improving scientific performance and its impact on society.

Increasing numbers of co-authors also reflect the increased necessity of research collaboration. First, research has become large scale and increasingly depends on research infrastructures — stimulating coordination and collaboration. Second, research is expected to address the large societal challenges (Gibbons *et al.*, 1994; Ziman, 2000) and societal issues are by definition complex and require interdisciplinary collaboration.

As more competition and more collaboration in research are demanded simultaneously, there is a need for in-depth analysis of the relation between the two, and of their effects on the quality of science and higher education. The tension between the individual reputation-based incentives and the systems' need for more direct collaboration has implications for research management and science policy. This is the thread through this special issue of *Higher Education Policy*. Most of the papers were presented within the empirical track 'Organization of Science Practices' of the EASST (European Association for the Study of Science and Technology) Conference in 2010 in Trento, Italy.

Collaboration and competition

The first paper, 'An Ethnographic Case Study' by *Kris Naessens and colleagues*, discusses the daily organizational and technical issues arising in a multi-disciplinary research organization. In this study of ICT research networks, several issues come up, such as the role of geographical proximity, the (not always necessary) deployment of modern communication and collaboration tools, and how collaborative research is managed. Finally, the authors observe



the tension between collaboration and competition within collaborative networks, finding that competition sometimes may hinder project progress. This poses questions for research management — an issue mentioned by the authors — but also for science policy that sets the incentives of the system through funding, evaluation and career policies.

The latter issue is taken up in the second paper by *Ruth Mueller*. In agreement with the previous paper, she discusses the hierarchical social structure and the allocation of work in academic research groups within the life sciences. She places the question about the relationship between collaboration and competition-based authorship struggles in the centre of her research. Her case study suggests that collaboration may be strongly hindered by the increased competition in the academic labour market of the life sciences. The interviewed postdocs are strongly steered by the assumption that tenure depends on the number of own publications, and therefore they prefer single authored publications above co-authored ones. Therefore, they are restrictive in setting up collaborations.

Competition and selection

The first two studies indicate that researchers' collaboration behaviour may be strongly influenced by the assumption that individual scientific performance is decisive for careers. The question remains to what extent this is empirically the case. In an explorative paper, *Barbara van Balen* and her co-authors investigate which biographical factors influence whether talented scholars make a successful academic career. The authors use a sample of 21 pairs of talented and matched scholars (matched in terms of generation and field of study). Interestingly, the exploration suggests that differences in scholarly performance do not explain differences in careers — in contrast to what the interviewees in the paper of Mueller believe. Most biographical factors such as the educational level of parents, support by a mentor, and the situation of the academic labour market do not discriminate; rather it is the accumulation of positive and negative factors that is decisive. That being the case, it seems that too many talented researchers leave the universities.

Hiring the top talents is needed for research universities to arrive at the top of the rankings — something that has recently become an important element in the competitive environment of higher education. Attempts to manage the performance of individual academics and academic groups have been there for some time now, and have received considerable academic attention under the label of new public management (Schubert, 2009). Emphasizing the negative effects of these evaluation systems on scholarly work and quality, a lot of emphasis is on how to devise better evaluation and management instruments (de Jong *et al.*, 2010; Spaapen and van Drooge, 2011). *Maria Nedeva and*



colleagues discuss in a provoking paper the effect of journal classification lists deployed by managers in business schools. Their paper explores why and how such instruments for management and control became part of the university landscape in the first place. And it addresses the question of what are the (negative) implications of these academic performance management instruments for universities and scholarly knowledge.

It is not only new evaluation instruments that change the relationship between management and scholarly professionals, but also funding instruments. The share of project funding is increasing in academic organizations (Lepori *et al.*, 2007; van Steen, 2012). As a consequence, researchers have to compete more with each other in order to receive research funding. This increased competition places more responsibility on research funders to have a sound and legitimate method for selecting funding proposals.

Finn Hansson and *Mette Mønsted* address the issue of scholarly autonomy, focusing on new funding schemes for stimulating large-scale research collaboration. In order to receive funding from the European Union and strategic research councils, universities are increasingly stimulated to collaborate with academic research groups, as well as with private firms. This development creates a new selection system for funding, in which — according to the case description of the authors — the habitual role of peers is increasingly marginalized in favour of other management and policy criteria. The paper describes the new role and restrictions for scientists who are acting as reviewers in situations where the new assessment systems are applied. They are focused on different dimensions, such as management, organization and political impact of research. These dimensions are becoming increasingly important and have implications for our traditional understanding of the scientific quality assessment system (Hemlin and Rasmussen, 2006).

Whereas the previous paper is based on a single case, the last paper in this issue analyses the decision-making process in three career grants schemes in detail. *Pleun van Arensbergen* and *Peter van den Besselaar* analyse the influence of the procedure and criteria on the outcomes of the process. In addition, this study suggests a relatively modest influence of the peers, finding a much more important role of the decision-making committees. What they do also show, however, is that the difference between success and no success is often very small, suggesting that the decision-making procedure does not discriminate strongly between applications. A few applications stand out as very good or bad, but a large number of the others are of about equal quality — making selection rather accidental. Furthermore, the outcomes are strongly influenced by the social dynamics of the job interview and by the weighting of the criteria — for example, how strongly does societal impact count?

The papers in this issue do provide a fresh perspective on the relation between competition and collaboration in research. The focus is especially on



the tensions that are increasingly asking for solutions — for which the papers generate first ideas. They should be addressed at the level of research management and academic leadership, which is an underdeveloped issue in science policy studies, but also in practice. And they should be addressed at the level of research policy, as funding levels and research evaluation procedures create context and incentives in which individual researchers have to operate.

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