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EMBL Genome Biology Unit Review 2016

The Genome Biology Unit at EMBL Heidelberg was reviewed on 17 to 19 May 2016 by a panel of 16 experts, including six members of SAC. The review was chaired by Olli Kallioniemi, Science for Life Laboratory, Karolinska Institute, Stockholm, Sweden.

Evaluation Summary

Overall, the Genome Biology Unit was rated as outstanding based on the quality of its research and its contribution to integrated activities in European life science research. The quality and quantity of its scientific output during the review period was considered exceptional. The Panel was impressed by the breadth of expertise and achievements within the Unit, with scientific highlights ranging from yeast genome biology, functional biology of structural variants of the human genome, computational strategies, chemical biology, microbiology, cancer and microfluidics, just to mention a few of the areas of interest. The level of external funding attracted by the Unit, particularly in the form of ERC grants, and the excellent career progression of postdoctoral fellows and Group Leaders upon leaving the Unit were also noted. Overall, the Head of Unit, the Director General and EMBL as a whole were congratulated on having assembled a world-class capability for genome biology.

The intensity of multidisciplinary interactions within the Genome Biology Unit, with other parts of EMBL and with the external research community was highlighted as a specific strength of the Unit. Particularly, scientific and technological interactions with EMBL-EBI have increased significantly since the last review, as computational approaches have become more and more central to the Unit's research. In this context the Panel was impressed by the number of joint appointments with Genome Biology of faculty from other EMBL Units, which reflects a response to the recommendations of previous evaluations, such as the recommendation to increase computational capabilities in the Unit. Since the last review the leadership of the Genome Biology Unit, previously shared with Senior Scientist Lars Steinmetz, has passed solely into the hands of Eileen Furlong. In addition to this change in leadership, the Unit has undergone moderate changes over the past four years, with one Group Leader departing the Unit and two new Group Leaders being hired. The recent nomination of an additional Group Leader to a University professorship creates the opportunity for a further new recruitment in the near future.

While recognising the Unit as extremely successful, the Panel provided suggestions regarding its future and long-term positioning, particularly in view of global developments in the rapidly growing field of genome biology. The Unit was encouraged to articulate a clearer vision and mission for the future, potentially developing a more targeted focus in specific niche areas of genome research rather than maintaining the current, more general approach.

Response to the Panel's Recommendations

I wish to thank the Panel for their time and considerable effort in reviewing the Genome Biology Unit. I am extremely pleased with the very positive assessment of the Unit's activities and appreciate the Panel's constructive feedback and recommendations with a view to further improving the Unit's future profiling.

The review panel stressed the importance of continuing to (re)define the Unit's vision and to specifically leverage Group Leader recruitments to gradually develop a narrower profile for the Unit. It suggested this was preferable to an alternative strategy, to use recruitments to bridge specific gaps in capabilities and technologies in the Unit. Given the limits to the size of EMBL Units, only few such positions will in any case be available. I agree that this is a constructive recommendation. Upon discussing the matter with the Head of Unit, it was agreed that future Group Leader recruitments in

the Unit will, as in the past, focus on hiring outstanding scientists across the spectrum of genome biology that complement and synergise with existing groups rather than re-filling gaps that arise as individuals leave.

Related to the previous point, and given the fact that much of the research carried out in the Unit involves high-throughput methods and considerable data production, a question discussed by the Panel was whether the Genome Biology Unit should recruit additional Group Leaders who engage in large-scale biology and consortium science or continue with a mix of “big” and “small” science. This topic is of strategic importance, not just for the profile of the Genome Biology Unit but for the entire organisation, as it links to the overall role and positioning of EMBL. I therefore agree with the Panel that this issue requires careful consideration and should be carefully discussed together with other EMBL Units. In this context, I have initiated and will continue to promote in-depth discussions within the organisation on the balance in EMBL science between large-scale, including consortium, projects and more mechanistic studies. Following these internal discussions, this topic will be the subject of discussion with SAC at the next annual meeting. At present, however, I see the issue as one that requires striking a good balance between the two approaches rather than selecting one or the other.

I note that the Panel feels that, while the Unit has a significant impact in a number of fields, it is less present at Genome Biology meetings themselves. In my view this is more a semantic rather than a real problem (some panel members discussed the possibility of renaming the Programme) but I will bring this matter up with the Unit leadership.

It was felt by the Panel that more attention could be paid to the career development of young Group Leaders, both by fostering research collaborations and by active mentoring. I have been assured by the Unit leadership that every effort is made to promote collaboration and a uniform integration of all faculty members in the Unit, and special attention dedicated by the Senior Scientists in the Unit to advise more junior colleagues. I also note that one of the two Group Leaders on the basis of whom this comment was formulated has recently obtained an appointment elsewhere that the panel rightly regarded as prestigious. Career development and mentorship of young Group Leaders are considered a priority in the organisation and have recently been the object of in-depth discussions among EMBL scientific leadership. In addition to strengthening internal mentorship EMBL is in the process of introducing an external mentorship programme, by which young Group Leaders will benefit from informal advice from an established colleague in their field on their research and career strategies. Eileen Furlong, Head of the Genome Biology Unit, is an active member of the working group that is active in developing a detailed proposal for the structure of this programme and is committed to its success.

Finally, an issue raised by the Panel in view of concerns voiced in particular by the predoctoral fellows regards the possibly excessive focus by Group Leaders in the Unit on publishing in the very limited number of journals of the highest impact, which may delay publication of results due to lengthy submission/revision/acceptance processes. This may become detrimental to PhD students (and to a lesser extent also to postdocs), whose chances to successfully compete for future fellowships and positions depend on obtaining publications during the period of their fellowship. Similar concerns have arisen in more than one EMBL Unit evaluation in recent years. Following recommendations from the Review Panels, I have repeatedly encouraged Group Leaders to discuss publication strategies openly and transparently with the members of their groups, and to balance the desirability of publishing in top journals with the need of fellows to publish in a timely manner. It is my intention to monitor closely that these recommendations are followed to avoid any adverse effects on fellows’ career opportunities. In order to analyse and review the situation in the different Units, and to facilitate discussion with the review panels on this topic, it was decided that publication statistics for fellows will be provided to future review panels as part of the background documentation for Unit reviews. These will include detailed information on the number of predoctoral and postdoctoral fellows that have left the Unit over the last review period and their publication record during their time at EMBL and for a limited period (6-12 months) thereafter. In this way, more focussed attention can be brought

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to cases where fellows have had to leave prior to publication and the reasons for such cases be discussed on the basis of concrete information.

To summarise, I wish to congratulate the Unit on a very strong performance in the last review period. In particular, credit should go to Eileen Furlong and Lars Steinmetz for their initial decisions on how to shape the Unit and to Eileen for her continuing leadership success.

Professor Iain W. Mattaj, FRS, FMedSci
Director General

13 June 2016