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EMBL-EBI Research Review 2017

EMBL-EBI's research activities were reviewed on 28 to 30 March 2017 by a panel of 15 experts including three members of SAC. The review was chaired by Edward Marcotte, Institute for Cellular and Molecular Biology, University of Texas, Austin (USA). The Chair of SAC and three delegates to EMBL Council attended the review as observers.

Evaluation Summary

EMBL-EBI conducts world-class research across the spectrum of computational biology – from genome analysis, gene expression and proteins through to networks and systems, chemistry and metabolism. The panel found the quality of EMBL-EBI's research to be outstanding and consistently at the cutting edge of bioinformatics, with scientists from the unit participating, and frequently leading, the most significant advances in the field. EMBL-EBI's publication output, community participation, international standing, and training environment for young scientists were all regarded as exceptional, and the panel was impressed by the strong connections between EMBL-EBI researchers and other EMBL units, most notably the Genome Biology Unit at EMBL Heidelberg.

EMBL-EBI's research unit has seen a high level of turnover in the last four years, with several group leaders moving on to new positions or adopting shared positions, and the recruitment of two new group leaders. Perhaps the most important change over the review period was the change in leadership from Janet Thornton to the joint directorship of Rolf Apweiler and Ewan Birney, with research activities being led by Ewan Birney and supported by EMBL-EBI Research Coordinator Nick Goldman, who played the same role with Janet Thornton. While acknowledging that the current leadership model works well, the review panel largely concurred with the EMBL-EBI Directors that the recruitment of a dedicated Head of Research would be beneficial for directing the overall research efforts and faculty mentoring within the unit.

Given the high level of turnover in the unit, partially also due to the high desirability of computational researchers at other institutions, it is important that the unit continue to actively recruit group leaders. While hiring firstly based on excellence in computational biology, these recruitments would focus on increasing connectivity among the groups, addressing issues of gender balance and increasing capacity in developing areas of bioinformatics such as single-cell analysis, image analysis and translational bioinformatics. In this context, the panel noted an interest in expanding the number of research group leaders as well as the predoctoral and postdoctoral programmes at EMBL-EBI, and recommended that EMBL management be flexible in allowing for this expansion as feasible over time.

Finally, in the context of mentoring and creating optimal conditions for the development, particularly of junior group leaders, the panel encouraged the unit management to work actively to ensure that researchers' needs for experimental 'wet lab' research can be accommodated.

Response to the Panel's Recommendations

I would like to thank the panel for their time and effort in reviewing EMBL-EBI's research activities, as well as for their constructive feedback. I am gratified by the highly positive evaluation of EMBL-EBI's research performance and would like to congratulate the unit members and the unit leadership. This review corresponds to a "coming of age" for the EMBL-EBI research activities which started slowly of (financial) necessity. In particular, credit should go to Janet Thornton for her tireless work and commitment in shaping EMBL-EBI's research over many years, laying the foundations for the current programme, to Rolf Apweiler and Ewan Birney for their efforts in driving the unit forward and their continuing leadership success over the last two years and to Nick Goldman for the excellent role he has played in supporting the development of the research activities on site.

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In relation to the recommendations of the review panel, perhaps the most strategically important concerns the possible appointment of a Head of Research at EMBL-EBI. Given the other commitments of those who are currently responsible and the requirement for continued, strong, research-specific leadership, we have already advertised this position. Unfortunately, we were not successful in attracting the candidate we wished to appoint. On the advice of the panel, we will continue to search for a suitable appointee. The person we seek will have leadership skills and an outstanding record in some aspect of bioinformatics research.

A second recommendation was to consider increasing the number of research groups and of the PhD programme at EMBL-EBI. These recommendations need to be considered in the context of EMBL as a whole, including the balance between different sites, as well as against a background of what will essentially be decreasing real-terms member state funding over the next five years. Against this background, I see no realistic prospect for the recommended increases in the predictable future.

The review panel stressed the importance of accommodating group leaders' needs for conducting experimental 'wet-lab' research, which are not currently catered for on EMBL-EBI's current premises. The issue was discussed in depth and, while there are strong arguments both for and against providing in-house space and resources for experimental research, I agree with the panel's recommendation that – especially for young researchers – every attempt should be made to connect them to experimental capacity. Such connections are currently enabled through various mechanisms, for example via collaborations or by embedding researchers in teams with overlapping research interests located in other institutes or research units (e.g. laboratories of the Wellcome Sanger Institute, the University of Cambridge and the Genome Biology Unit at EMBL Heidelberg). Together with the unit leadership, I will of course carefully monitor the success and suitability of these mechanisms and periodically reassess the need for creating dedicated in-house experimental capacity for EMBL-EBI researchers in the future. It is possible that a new building planned on the Hinxton campus may provide this opportunity.

One serious general issue raised by the postdoctoral fellows was that of parental leave at childbirth. This is an issue which, provided it is viewed as a priority by the EMBL Staff Association, we will discuss with the next EMBL Council working group on terms and conditions of employment. Other matters raised by the pre- and postdoctoral fellows will be discussed further in the appropriate local or EMBL-wide context.

I close by congratulating my EMBL-EBI colleagues on a very positive review, reflecting the excellent research they are pursuing across a broad set of biological fields. I look forward to their further success.

Professor Iain W. Mattaj, FRS, FMedSci
Director General

24 May 2017