



## EMBL Grenoble Unit Review

EMBL Grenoble was reviewed on 16 to 18 October 2017 by a panel of twelve international experts, including three members of EMBL's Scientific Advisory Committee. The review was chaired by Titia Sixma, Netherlands Cancer institute (Amsterdam, NL). Edith Heard, Institut Curie (Paris, FR) attended the review as an observer.

### Evaluation Summary

The overall performance of EMBL Grenoble was rated as outstanding based both on the quality of its research and services and the training and development of young scientists. The unit continues to operate at the cutting edge of structural biology, creating innovative, enabling technologies for life scientists. In this context, the review panel noted the development of fully automated crystallographic X-ray data collection using the MASSIF beamline and the development of the revolutionary CrystalDirect technology for automated crystal harvesting as particularly noteworthy highlights. These developments are the first of their kind in the world, and make realistic the massively high-throughput screening of small-molecule ligands for proteins of therapeutic interest. Among the many remarkable advances in structural and molecular cell biology by the unit's research teams, the elucidation of the mechanism of influenza viral RNA replication and transcription was singled out for special praise.

The review panel applauded the unit's continuous efforts in developing and operating vital facilities that benefit the structural biology community in Europe and beyond. Significant improvements to the beamlines were developed over the review period to make use of the enhanced capabilities of the ESRF upgrade, with a focus on the local strength in fragment screening and automation. In addition, EMBL Grenoble's services successfully adapted to the rapidly evolving structural biology research landscape and changing user demands, most notably by establishing – in collaboration with the ESRF and IBS – a new facility for high-end cryo-EM that will be operated similar to a beamline. It was the review panel's opinion that, in view of these developments, the impressive expertise and experience of the technical teams at EMBL Grenoble might be leveraged to develop innovative and more automated solutions for cryo-microscopy sample handling and data collection, which are currently time-consuming manual processes.

The last review period has seen significant changes in the composition of the unit's faculty, with the departure of four group and team leaders and three new arrivals. The new group leaders all have a strong – although rather traditional – structural biology orientation. While being enthusiastic about the quality of the individual new recruits, the review panel expressed concerns that these may further narrow the unit's research focus on RNA/protein interactions and the structural analysis of large complexes. They therefore recommended that the last group leader recruitment be used to acquire new expertise in currently underrepresented areas of structural biology. While multiple possibilities were outlined, computational analysis – perhaps with an interest in small-molecule screening – was highlighted as a clear area of potential focus for the new group leader; such a research profile could bridge the gap between the strong method development teams and the structural analysis groups and broaden the combined scope of the unit's activities.

The review panel engaged in wide-ranging discussions with predoctoral and postdoctoral fellows over many aspects of research, training, mentoring and work/life balance at EMBL Grenoble. A general concern expressed by the fellows regarded an insufficient level of support from group leaders for attending conferences. The committee suggested potential strategies that could be implemented to improve the situation and ensure that fellows are exposed to scientific meetings appropriately. Other issues raised, particularly by the postdocs, included a need for more centralised general lab support staff and a desire for assistance in dealing with some logistical aspects related to childcare. In spite of these constructive criticisms, the fellows were generally very positive and enthusiastic about EMBL's training programmes and the research environment at EMBL Grenoble.



## Response to the Review Panel's Recommendations

I begin by thanking the review panel for their detailed evaluation of the activities of EMBL Grenoble. I am delighted with their overwhelmingly positive report of the unit's performance. The unit's success has depended to a considerable extent on the work of the Head of EMBL Grenoble Stephen Cusack. The review panel rated his leadership of the unit as outstanding – an opinion that reflects my own.

Among the general recommendations provided by the review panel the most important was to try to widen the research and method development focus of the unit, especially by leveraging the remaining group leader position to acquire expertise in computational analysis and methods. I note and largely agree with the review panel's suggestion, and believe that a stronger presence in this area would greatly benefit the research-oriented as well as the technical teams at EMBL Grenoble. Although both of very high quality, these two aspects of the unit have diverged somewhat in their focus and the entire unit would benefit from a recruit who can help bridge this gap. I have discussed the matter with the unit leadership and we will make an extra effort during the ongoing recruitment process to identify an excellent candidate with the suggested profile. I note however that researchers with the appropriate expertise are rare and therefore difficult to find.

While welcoming the recent developments at EMBL Grenoble, and on the Grenoble campus as a whole, in the area of cryo-EM, the review panel was of the opinion that this joint effort will require monitoring and, very likely, expansion. The most urgent requirement they identified at present is for new high-quality instrumentation for 2D cryo-EM screening. We will discuss, also with our partners on campus, whether and when this investment is feasible.

In relation to the concerns voiced by the PhD students and postdocs, I regard the requirement that fellows attend scientific conferences as very important. Participation in these events is crucial for their scientific development and networking opportunities, and is required of fellows enrolled in EMBL's training programmes. EMBL management has already made clear that fellows should expect to attend at least two scientific meetings during their time at EMBL. Nevertheless, similar comments have been made in other evaluations. I will bring up the issue with EMBL Group Leaders, encouraging them to balance budgetary constraints with the fellows' need to attend scientific meetings, and discuss with them the specific suggestions provided by the review panel in this respect.

Similarly, I will address other matters raised during the review of EMBL Grenoble, which I do not go into in detail in this response, in the appropriate local or EMBL-wide contexts.

I would like to conclude by congratulating the unit leadership and all of its members on their excellent performance and very positive outcome of the review.

A handwritten signature in blue ink, appearing to read "Iain Mattaj", is written over a large, light blue circular scribble or watermark.

**Professor Iain W. Mattaj, FRS, FMedSci**  
**Director General**

9 November 2017