

## EMBL Barcelona Review Summary and Response

The review of the European Molecular Biology Laboratory's Barcelona Unit took place in Barcelona in hybrid format on 5 - 7 April 2022. The review panel consisted of 13 international experts, including four members of EMBL's Scientific Advisory Committee (SAC). The chair was James Briscoe, from The Francis Crick Institute, London (UK). Several observers were present, Angela Nieto, Vice Chair of EMBL Council and Spanish Delegate to EMBL Council, Edith Heard, EMBL Director General, Ewan Birney, EMBL Deputy Director General, and Jessica Vamathevan, Head of Strategy.

### Evaluation Summary

The reviewers acknowledged the remarkable overall performance of EMBL Barcelona in the few years since it was established, based on the quality of its innovative research, the impact of its mesoscopic facility, its work in training young scientists, and its contributions to integrated activities in the European Life Sciences. The site only opened in 2017, but it clearly has all the characteristics that should lead to it becoming an internationally recognised research unit. This first review of the site since it was established covered the period 2018-2022. Six Group Leaders were under review: James Sharpe (Head of Unit), Jim Swoger (Head of Facility) and group leaders Kristina Haase, Maria Bernabeu, Miki Ebisuya, and Vikas Trivedi.

The panel congratulated the Head of Unit James Sharpe for developing and implementing a compelling scientific vision and for recruiting a highly talented and diverse group of investigators, who together clearly add up to more than the sum of their parts. The initial outputs from the Unit show the potential to provide highly collaborative, creative and impactful research of the highest quality.

The panel noted that the cooperative atmosphere within EMBL Barcelona is exceptional and that it is clear James Sharpe invests considerable time and effort into his Head of Unit role. This has been crucial in fostering a positive and coherent research environment, and a supportive atmosphere for including the training and mentoring of scientific colleagues. The panel also commended the Unit for the diversity of its staff, and noted there is a clear commitment to fostering an inclusive and diverse culture.

The review panel noted that although the topics of research in the Unit are broad, there is commonality in the intellectual perspective and the techniques used to study research problems. The Unit is harmonious, collaborative and scientifically distinctive: research groups share strengths in applying cutting edge techniques in mesoscale imaging and bioengineering/in vitro cellular modelling, and effectively apply computational and quantitative methods to data analysis. There is clearly a shared ethos and a sense of excitement that produces an enthusiasm to collaborate and interact.

In addition to the six groups under review, two new group leaders have recently been identified to join the Unit, bringing it to completion. Following this very active and successful period of hiring and setting up of the Unit, the panel recommended that the next period should focus on consolidating and supporting the ongoing research. The next four years will be crucial for EMBL Barcelona to forge its identity and demonstrate its unique contribution to EMBL. The panel noted that many of the groups have been awarded substantial external grants, and that filling the posts that come from these grants means that space could become limited. Reviewers therefore recommended a small expansion in space to accommodate the additional research activity supported by the external grants if feasible. However, they also noted it is important that the junior groups do not expand too rapidly. In the longer term, the panel agreed that an expansion of the Unit to 9-10 groups to ensure sufficient continuity in the context of EMBL's nine-year rule could be considered, although the panel is aware that this would require re-negotiation of the Host Site Agreement and cannot happen within the current indicative scheme period.

The Mesoscopic Imaging facility (MIF) was highlighted as a unique specialised facility that is important for the success of EMBL Barcelona and offers imaging modalities that are likely to be increasingly important to EMBL research groups. The panel encourages EMBL Barcelona leadership to develop a strategy for the MIF that balances supporting the Unit's current researchers and developing new technologies.

The reviewers emphasised that continued mentorship of new group leaders is essential in this young Unit, and encouraged all the group leaders to gain diverse mentorship and to engage with the new mentoring programme that EMBL is planning. Given the very different scientific backgrounds of the group leaders at EMBL Barcelona, the panel suggested it might be appropriate for the Unit's group leaders to establish mentoring relationships beyond EMBL. The panel also recommended that any obligations to participate in committees be carefully monitored, in order for this burden to be equally distributed amongst the group leaders to ensure a fair allocation of workload.

The panel praised the contribution of members of the Unit to the development of the new scientific Programme for EMBL. The science of the Unit is well suited to the new Programme and epitomises the goal of EMBL to study biology across scales. For example, Maria Bernabeu is the co-chair of the Infection Biology Transversal Theme, and there are several projects in the Unit that are relevant to the Planetary Biology Transversal Theme. The Unit's interests in the integration of theory approaches mean that it will also make significant contributions to Theory@EMBL, including through the recent recruitment of a new group leader with the Theory Transversal Theme, as well as the planned establishment of a new EMBL-CRG Collaboratorium for Modelling and Predictive Biology.

Overall, the review panel found that EMBL Barcelona is integrating well within the European research landscape and with other EMBL sites. Collaborations within Barcelona and the broader

Spanish scientific community have embedded the Unit within the national and international context, including collaborations with local research institutes, universities, and hospitals. The panel noted it will be important for the Unit to prioritise so that the most important interactions are maintained and the focus is on delivering the science of EMBL Barcelona. Furthermore, it was recommended that the Unit should seek to strengthen its connections with the well-established physics community in Barcelona, as well as with the CRG.

The panel observed that being part of EMBL and being within the local environment of the CRG, both offer the opportunities to the Unit to connect the mesoscale understanding of biological processes that are being developed within the Unit, to mechanistic insights using molecular and genetic approaches. Reviewers therefore suggested the Unit take greater advantage of EMBL's core facilities and of the expertise across EMBL as well as in the CRG, to develop molecular assays and genetic perturbation approaches that will complement its research strengths.

Feedback from trainees was uniformly appreciative of the infrastructure, equipment, and scientific leadership of the unit and of the support and opportunities available through EMBL. However, both PhD students and postdocs raised concerns about the salary divergence among EMBL sites. The Panel pointed out that these issues are currently being addressed by EMBL management, with a decision expected by Council in June 2023. Some questions were also raised about personal merit postdoc fellowships to be looked into by EMBL management.

In conclusion, the review panel enthusiastically praised the role of James Sharpe in forming the EMBL Barcelona Unit, his achievements in establishing a diversity of topics, approaches and researchers and the group leaders for their involvement in the successful establishment of the Unit. EMBL Barcelona is performing exceptionally promising work and should establish itself in the coming years as a centre of outstanding international research.

### Response to the Panel's recommendations

I would like to express my most sincere thanks to all the review panel, and particularly the Chair James Briscoe for contributing their time, energy and expertise in reviewing EMBL Barcelona. This was the first review for the Unit, and it has come at an extremely opportune moment. EMBL Barcelona is at a crucial stage of its development, as it shifts its focus from establishing itself to consolidating its research programme. I believe the input received from the panel will have a long-lasting impact on the evolution of the Unit.

I would like to congratulate everyone at EMBL Barcelona for such a positive review. My most sincere thanks go to James Sharpe for the outstanding leadership and clear scientific vision that were so instrumental in establishing and shaping this Unit. I agree with the panel that he has succeeded in establishing a vibrant, diverse and cohesive Unit of young researchers who are performing exceptionally promising and highly impactful research.

I fully agree with the panel that the next few years will be essential for building on EMBL Barcelona's promising start and consolidating its research programme. I am sensitive to the issue of space but I also agree with the panel's view that the Unit must be vigilant to ensure that the groups do not grow too quickly and beyond the space available. We will work with local partners to explore possibilities for a small extension in space in the short term. In the meantime, we will remain vigilant to ensure that the Unit evolves sustainably within the resources available.

I am very pleased the reviewers recognised the value and unique contributions the Mesoscopic Imaging Facility (MIF) brings to both EMBL Barcelona and EMBL as a whole. I agree with the panel that this is an opportune time for developing its future strategy, mindful of potential synergies with the Imaging Services and Core Facilities throughout EMBL.

I join the review panel in commending the leadership at EMBL Barcelona for fostering a positive, collaborative, inclusive and diverse environment. I agree with the reviewers that diverse mentorship for new group leaders is extremely important, particularly given the wide variety of academic backgrounds represented by researchers at EMBL Barcelona. I would like to encourage all group leaders to seek external mentorship where appropriate, and I believe our new mentorship guidelines, when launched, will offer young investigators throughout EMBL the tools they need to succeed. I also thank the reviewers for highlighting imbalances in committee work between the Unit's group leaders, which I believe are already being addressed.

I am delighted with the Unit's role in developing and implementing our new scientific Programme "Molecules to Ecosystems" and I echo the panel's comments that EMBL Barcelona perfectly exemplifies how to make the new Programme, and the new Transversal Themes come to life. The Unit has shown exceptional commitment to the Themes through direct leadership, recruitment, and innovative research.

The panel's recommendations regarding strategically prioritising interactions with external institutions were also appreciated. While the collaborative spirit of the Unit is to be celebrated, I agree with the reviewers that it will be important in the coming years to focus on the key interactions that will help EMBL Barcelona deliver on its ambitious scientific vision.

I would also like to thank the reviewers for the discussion on how EMBL Barcelona can leverage its connections to develop molecular and genetic approaches complementing its current research portfolio. I agree with the panel that the Unit's connections with local institutions and within EMBL afford it the exciting opportunity to explore its research questions mechanistically. While several promising collaborations between EMBL Barcelona and other Units within EMBL are already under way, I take on board the reviewers' suggestion that the Unit should take advantage of further opportunities to complement its strengths with molecular approaches.

Lastly, I am very pleased that the pre-doc and post doc fellows are very satisfied overall. In response to the questions regarding salary discrepancies for pre- and post doc fellows as stated by the panel,

the broader issue of salary inequality between EMBL sites is currently being addressed. Concerning a question raised about personal merit fellowships, a fellow's salary is not “topped down” to EMBL rates, but rather mandatory social security contributions are deducted from the fellowship. Clearer communication of this procedure to trainees will be a priority, and in light of these comments we will also review how our procedures affect the different types of fellowships to ensure fairness.

I would like to conclude by once again congratulating James Sharpe and everyone at EMBL Barcelona for a very successful review. EMBL is extremely proud of what they have achieved over this first review period and I am looking forward to supporting the Unit in the years to come. My thanks to James Briscoe and all the review panel for their fruitful discussions, advice and expert contributions, which will be crucial to the future success of EMBL Barcelona.



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