

Towards building and disseminating comprehensive publication guidelines for biomolecular small-angle scattering in an e-learning format

Biological Small Angle Scattering is a technique that is widely used to characterize samples of biomolecules in solution. Despite thousands of data sets generated every year, only a fraction of them is published, and even a smaller fraction is presented in a way that results can be reproduced, and unbiased conclusions can be drawn. A reporting guideline, specifically targeted for structural modelling of small-angle scattering data, was published in 2017 to facilitate the reviewer's and the reader's independent assessment of the data quality and its interpretation. [1] More recently, an updated template was published for the general biomolecular structural modelling SAS experiment and an additional specific SAS-contrast variation template. [2] A primary motivation for the endeavour is to launch a community consensus on what should be in a publication, together with standardized data quality assurance and the employment of agreed-upon model validation methods. The standardized measure also, in turn, instils confidence in the results, concerning a broader structural biology community.

By leveraging the already laid-out foundation from the guideline templates, we initiated an effort to distil the dense information from the papers into a more systematic and engaging format with the e-learning platform (<https://e-learning.pan-training.eu/>). The e-learning course would be a beneficial platform to disseminate the guidelines more interactively. Furthermore, the updated templates are available to be downloaded from the platform, divided into relevant sections of data pipeline/measurement type, and populated as the SAS measurement goes. This eases the rather lengthy effort if the table needs to be populated all at once near a measurement's publication submission. Therefore, we invite experienced biomolecular SAS experts to contribute further to the platform. But, more importantly, the students/users beginning their journey using biomolecular SAS as a tool in the structural investigation are invited to take advantage of the platform. The presentation will detail the content of the e-learning platform and its most updated features, such as interactive quizzes and useful up-to-date links for the tools frequently used in biomolecular SAS, as well as ways to contribute/enrol.

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