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On behalf of the COMBINE Coordinators
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National Institutes of Health
9000 Rockville Pike
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Dear NIH,

We are the coordinators of COMBINE (Computational Modeling in Biology Network), an initiative to coordinate the development of many popular standards and formats for computational modeling in biology. We are grateful for the opportunity that NIH is providing to respond to the *Request for Information (RFI) Making Data Usable – A Framework for Community-Based Data and Metadata Standards Efforts for NIH-relevant Research*. We would like to take this opportunity to describe the experiences of the standardization efforts under the COMBINE umbrella.

The history and goals of COMBINE

COMBINE was formed in 2009 by the groups involved in developing file formats and other standards in systems biology, including SBML [**? ? ?**], SBGN [**?**], BioPAX [**?**], CellML [**? ?**], SED-ML [**? ?**], SBOL [**?**], NeuroML [**? ?**], and others. The impetus was the realization that many individuals were involved in multiple standardization efforts, traveling to separate international workshops year after year and performing many of the same organizational tasks multiple times for each standards community. Eventually, two "super meetings" were held involving many of the groups, and slowly we realized that not only could there be cost savings in co-locating meetings: the various efforts could also benefit from common infrastructure, operating procedures, and potentially a common voice to seek support. The Le Novère group (then at the EBML European Bioinformatics Institute near Cambridge, UK) undertook the creation and maintenance of a home website for COMBINE at

`http://co.mbine.org`

The primary goal of COMBINE is to coordinate the development and other activities of the various community standards used in the area of computational modeling. By doing so, we hope that the federated projects will develop standards that are more interoperable and less overlapping than if the efforts proceeded separately. COMBINE offers a format specification infrastructure, announcement lists, and more, as discussed below.

An important point about COMBINE is that it *does not dictate what individual standardization efforts should do*. Actions are entirely up to the leaders and members of the communities involved in the individual efforts. COMBINE does offer examples of what has worked in terms of community organization approaches, as well as some common infrastructure for such things as cataloguing standards specifications, but the degree of participation is up to the groups behind the efforts.

References