



TUTORIAL F

ICBO: International Conference on Biomedical Ontology

From OBO to OWL and Back: An Approach to Building Scalable Ontologies

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Instructors:

David Osumi-Sutherland
Christopher Mungall

Objective

Building scalable, maintainable ontologies requires the use of reasoning. In particular, maintaining multiple axes of classification by hand quickly becomes impractical. A much more scalable approach is to assert only a single classification for each class and infer additional classifications using a reasoner.

The ontology language OWL 2 is ideal for this approach, as it allows expressive logical definitions of terms for use by a range of fast and well-tested reasoners. But many bio-ontologists find the OBO ontology format and its associated editor, OBO-Edit more convenient to work with. In addition, many major databases currently require completely classified ontologies in OBO format.

Recent improvements in OBO to OWL mapping specifications and tools make lossless conversion between OBO and OWL easy. This tutorial will focus on how to use these tools, along with OBO-Edit, to build scalable ontologies in OBO while using OWL reasoners and tools such as Protege 4 to test ontologies as you build them and make pre-classified release versions. For some it may be a step to moving from OBO to OWL completely, for others this approach can provide the best of both worlds.

Intended audience

This will be a half-day tutorial hands-on tutorial, requiring attendees to bring laptops and install specified software. It will be suitable for those new to ontology or experienced ontologists currently working in OBO format.

Preparatory Reading

- [OWL 2 primer](#)
- [Protege Pizza tutorial](#)
- Rector, A. 2003 [Modularisation of Domain Ontologies Implemented in Description Logics and related formalisms including OWL](#). Proc. K-CAP:ACM: p. 121-129.
- Smith et al., 2005 [Relations in biomedical ontologies](#). Genome Biol vol. 6 (5) pp. R46