

Ontology of Craniofacial Development and Malformation (OCDM): Development, Distribution, and Access

Landon T Detwiler¹, Jose LV Mejino Jr¹, James F Brinkley^{1,2,3}

**Departments of Biological Structure¹, Biomedical Informatics and Medical
Education², Computer Science and Engineering³**

The Ontology of Craniofacial Development and Malformation (OCDM) is a collection of several sub-ontologies that together represent, for multiple species, the normal adult, malformed, and developmental anatomical structures involved in craniofacial dysmorphology. These sub-ontologies include the various labels by which those structures are known, and the spatio-temporal relationships between them. How is that knowledge created, where can you get it, in what form will it come, and how is it used? In this poster we will illustrate the pipeline by which the OCDM is developed and distributed as well as one way that it can be accessed/queried.

The content of the OCDM will be presented separately, and in more detail, by Mejino et. al.¹ and is not the focus of this poster. But the development pipeline starts with content. This pipeline includes:

- Domain content and ontology experts
- Protégé OWL ontology editor
- Subversion repository manager
- Software applications to
 - Extract a sub-ontology from a larger ontology (CHO from FMA)
 - Create template individuals for each OCDM sub-ontology, i.e. punning
 - Create an RDF triple store from several OWL ontologies
 - Query over the above mentioned triple store
- Scripts to move files to and from the repository and run the above applications
- Cron jobs (recurring tasks) to ensure that the above scripts are run on a regular basis

This poster will illustrate how all of the above components work together to create regular, up-to-date, versions of all of the OCDM ontology artifacts. Further, we will explain how official releases are handled, what format they take, how you can get them, and an example of interacting with the knowledge in the OCDM through queries.

¹ Mejino JLV Jr., et. al. (2015) Ontology of Human and Mouse Craniofacial Musculoskeletal System. 2015 FaceBase Meeting, poster.