

## RCN vertebrate working group notes

### Participants:

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### Goals:

develop archosaur and chick AOs  
evaluate skeletal hierarchy across AOs  
How are we going to coordinate across these ontologies  
CARO - user friendly terms

Focus ontology building at RCN on limb/fin terms  
build term list, create map  
integrate with high level ontologies

Relevant ontologies: AAO, TAO XAO, ZFA, MA, FMA

### General discussion:

Cell types should they be in AO?  
pre vs. post-composition for cell types. can be in gross AO, or can be post-composed at annotation time.

need taxon-specific types in the CL for birds

need in GO to reference anatomy

one of early action items might be to determine which cell types are missing from CL  
Melissa- some cell types can go into species-specific ontologies but need to have logical supertypes in CL.

derives\_from in lineage in CL.

Do we need to infer that extinct animals are inferred to have various entities? How do we represent this?

TAO imports VAO, which in turn imports CARO

This is an opportunity to feed requirements to OBOedit for imports etc.

SB: Identify list of cells in birds but not mammals (but may be in *some* fish) for cell ontology e.g. feather cells (poss not unique), bursal stromal cells, heterophils, thrombocytes.

Where do things belong? do they belong in CARO? Uberon? VAO? TAO? chick etc?  
This will be a big part of developing Arch and chick AOs because we want to cede these to higher taxonomic groups where applicable.

In GO, send out a diff file when you make changes.

**Proposed workflow:**

amniote (arch/chick group): 1. build list of limb terms in spreadsheet. 2. Add terms and relations in CMAP.

mouse group evaluate mouse limb terms relative to higher level ontologies

both groups list proposed changes to existing vertebrate ontologies

amniote ontology?

need to consider taxonomic relevance as we work forward- where will these things live

FYI: Reptiles have three major lineages: lepidosaurs (represented today by lizards, snakes, and the tuatara); archosaurs (represented today by crocodilians and birds); and parareptiles (possibly represented today by turtles).

## Ontology building notes

**VAO updates:**

VAO:gastralia add part\_of axial skeleton

**homology statement**

fish: cleithrum homologous\_to tetrapod:clavicle and furcula in birds (=fused clavicles)

TAO:fossa should be changed to is\_a anatomical surface (structure?) because they are features of the bone surface.

The term "hip bone" should be synonymous with "innominate bone". This should be the mereological sum of the pelvic girdle skeleton plus some part of the axial skeleton (e.g. sacrum and coccyx in humans).

Paul says human innominate doesn't include sacrum and coccyx

acetabulum in MA should be anatomical surface, not a bone

VAO proposed changes

MA & TAO: chondrocranium - frontal bones should be separated from the chondrocranium (they are not cartilage).

MA: add pharyngeal arch synonyms for branchial arches.

MA & TAO: entotypanic bone (syn:ectotypanic) need to be added as mammal terms for angular of lower jaw.

UBERON:0001689 name: malleus - incorrect definition: develops from mandibular arch; change to part of pharyngeal arch.

VAO: gastralia (not in Uberon)

## Vertebrate Working Group Summary

### (A) Accomplishments: the story so far:

Changed focus from archosaurs to amniotes.

Discussion with Duncan D. - Duncan is part of the UK group working on chick embryonic anatomy ontology. Duncan has sent screen shots from his ontology

- extensive "part\_of"
- missing head & neck at this point

Agreed to monthly calls (Duncan, Wasila, Melissa, Fiona; copy RCN Vert group).

Set up WG mailing list for vertebrate groups

Focusing on skeletal system have:

- completed terms & relationships for **pectoral appendage** (limb & pectoral girdle)
- completed terms & relationships for **pelvic appendage** (limb & pelvic girdle)
- drafted skeletal terms for **skull** (cranium & jaw)

Done some definitions to learn structure/composition (genus-differentia terminology).

Work from this workshop is added to a dropbox folder for the group members and we have Google docs documentation.

Peter Midford has completed a tool to get a VUE file into OBO file. (Huzzah!)

### (B) To be continued...

This work is in VUE - with Peter's help we will get this into OBO file.

Need to work on adding definitions for all these terms (Fiona initially for chicken; then Nizar and Paul review). This can be done while we are getting VUE → OBO export.

Need to subset terms based on chick (FM/SCB).

Need to make proposed changes to upper level ontologies (Wasila & Melissa)

Develop workflow for making requests & ontology updates to higher level ontologies. (And how these changes flow through to the relevant ontologies.)

Require mechanism for collaborative ontology editing by multiple groups.

- mechanism to track decisions and comments
- visualization of separate ontologies
- synchronization and working with subsets of ontologies based on species

Duncan - send summary of workshop progress (Wasila & Fiona)

- face-to-face meeting for linking developmental & adult ontologies?

Melissa - derives\_from & develops\_from relationships and linking developmental & adult ontologies. **For now use "develops\_from"**.