

**Briefly:** You will choose a non-mammalian taxon; find out the most recent discoveries related to its taxonomy and phylogenetics; and assess the extent to which online resources include up-to-date information about the group. The project is worth 150 points and a short write up of your results will be due on May 5th.

The “paper” must be submitted as a pdf.

**Goals:** The project will give you practice at, and help you demonstrate proficiency in:

1. reading primary literature in taxonomy/classification;
2. reading and understanding the results of a phylogenetic analysis; and
3. wading through online scientific resources to find and assess the information that they contain.

**Restrictions:** To complete the project you’ll need to find a group:

1. with a recent, published estimate of a phylogeny (with at least 12 members of the group included), and
2. a taxonomic treatment (often referred to as a “revision of a group”) of at least one of the members of the group.

Since you need to assess that the online resources are up-to-date, it is important that you identify the most recent taxonomic and phylogenetic studies of the group. If you do not, then it will be difficult to tell if the online resources are out-of-date, or they are more up-to-date than the papers that you have read.

This may mean that you have to switch which paper you consider to be your focal phylogenetic paper or your focal taxonomic paper during the course of your research.

**Online resources to check:** (not all of these are devoted solely to systematics).

**Phylogeny/Classification oriented web sites.** Check for at least ten phylogenetic groups and all of taxonomic groups for your clade in the following sites:

- The Encyclopedia of Life: <http://eol.org>
- The Tree of Life Web Project: <http://tolweb.org/tree>
- NCBI’s taxonomy database: <http://www.ncbi.nlm.nih.gov/taxonomy>
- The Open Tree of Life: <http://tree.opentreeoflife.org/>

If the phylogeny paper that you chose include many groupings, you can select ten groupings from the tree and look for those ten groups in these websites. If the phylogenetic paper discusses support for novel groups (groups revealed by that study), make sure to include those newly recognized groups in your choice of ten species.

**Species oriented web sites.** Choose 5 species from your group; if your taxonomic paper focussed on just a few species in the group, these species must be among the five that you select. Check each of them in:

- Global Biodiversity Information Facility: <http://www.gbif.org>
- Wikispecies [http://species.wikimedia.org/wiki/Main\\_Page](http://species.wikimedia.org/wiki/Main_Page)
- Wikipedia [http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page)
- iSpecies <http://ispecies.org/>

You can certainly add other websites to these lists.

**What to put in your written summary:** You will need to briefly summarize recent information about the taxon that you chose (including references). For each online resources, you will need to summarize the “mission” of the website (what task is the site trying to help accomplish?). All of the sites mentioned interact with taxonomy and/or phylogenetics in some way. For each site, you will need to report how well it reflects our recent systematic (taxonomic and/or phylogenetic) knowledge of the group.

If you can find no information on “your” taxon on the site, you can simply report that.

If you do some work to correct errors in the online material, document your efforts to fix the sites.

It is fine to pick your group by browsing one of these sites, but if you do that, indicate which site got you interested in the taxon.

Let us know if you have questions.

**Participation in community effort to make phylogenetic knowledge more accessible:**

These steps may require you to create an account on GitHub. These accounts are free and do not require you publicly display your email address.

**Uploading the phylogeny from the paper that you read** The Open Tree of Life project has an interface (<https://tree.opentreeoflife.org/curator>) for uploading published phylogenetic statements. You should check that web site to see if the phylogenetic paper that you have chose is already included in that project’s collection of trees. If it is not included in Open Tree and the paper (or its supplementary materials) includes a file with the author’s preferred tree, then you will need to add the study to the Open Tree system.

If the study’s phylogenetic statements are not available note that in your summary.

**Checking the Open Tree Taxonomy** The site <https://tree.opentreeoflife.org/taxonomy/browse?name=Eukaryota> will allow you to check the taxonomy that is compiled by the Open Tree of Life project. If you see errors in the taxonomy the group that you have chosen, you will need to summarize them by:

1. clicking on the “View this taxon in the latest synthetic tree” link.
2. clicking on the “Show Comments” link near the top left.
3. clicking on “Add a new topic” button.
4. describing the taxonomic problem that you observed. You do not need to provide your real name, if you choose not too (but if you don’t, please indicate to me in your summary what name you used when creating the comment).

If the Open Tree Taxonomy is up-to-date with respect to the taxonomic paper that you read, note that in your summary.