Protocol for assigning zoonotic status codes to mammalian parasites

**Materials**  
Access to UGA library search engines and references

Coding flowchart  
Acha PAHO 3-volume reference (online [here](http://www.scribd.com/doc/39011784/Zoonoses-and-Communicable-Diseases-Common-to-Man-and-Animals), or found as a PDF in Zotero library)  
Zotero library (standalone and browser plugin are helpful)  
- utilize Tags function to flag papers “double check”  
GIDEON database (login and password)

Start at the top of the flowchart and follow the branches down as far as you can.

General instructions

1. To assess whether the microbe has been reported in humans, do the following (in order):
   1. GIDEON database ([www.gideononline.com](http://www.gideononline.com))
      1. login: [han.science@gmail.com](mailto:han.science@gmail.com); pw: koala!fish7\*
      2. if reported in the Diseases tab of GIDEON you know that it is pathogenic (move on to step 3).
      3. if not reported in GIDEON, go to step b.
   2. Acha PAHO reference;
      1. if reported here, the microbe could be a pathogen or a commensal - read carefully to distinguish, and track down any primary references (step 4)
      2. If not reported in Acha PAHO, try c.
   3. Search Google Scholar and/or Web of Science;
      1. record the search string used and the number of documents checked (I searched using *“Acantheocephalus anguillae” human infection*; there were 48 papers returned in Google Scholar
      2. search through these references to find evidence that this parasite has been found in a human
      3. If you cannot find a reference for the occurrence of this microbe in a human, **code it as -1** in the allpara3 spreadsheet.
      4. **Record a confidence score** for this parasite (see metadata tab in the allpara3 spreadsheet).

Example: For *Acanthocephalus anguillae* I would record a zoonotic score of -1 (not found in humans), a confidence score of 3 (very little studied – data deficient)

1. If the microbe **has** been reported in humans, assess whether it is pathogenic or commensal by checking the following references (in order):
   1. If identified in GIDEON, the parasite is pathogenic
   2. If found in the ACHA PAHO reference, it could be either. Read carefully to distinguish.
   3. In all cases, track back to the *primary reference* reporting the parasite as pathogenic.
2. If the microbe is indeed a human pathogen, determine next whether there is evidence to suggest that the pathogen **is transmitted** from the animal to humans (**code as 1** and **record a confidence score**).
   1. Check Acha PAHO for information to make this distinction
   2. Check the primary literature (Google Scholar and/or Web of Science) and record SearchString and the number of hits in allpara3
   3. If there is no evidence to suggest that a vertebrate transmits infection to humans, **code as 0** and **record a confidence score**
3. If the parasite is known to be transmitted by a vertebrate reservoir, determine next whether there is evidence to suggest humans are passing infection on to other humans, or whether humans are only a dead-end host.
   1. Check Acha PAHO for information to make this distinction
   2. Check the primary literature (Google Scholar and/or Web of Science)
   3. **Assign a score of 2, 3, or 4** with **confidence scores** and **citations** in Zotero to justify the assigned scores.

If you assign a score based on what is reported in a particular paper and you would like me to double check it, flag the papers in Zotero by adding the tag “double check”. In addition, write a short note in the Notes tab of Zotero about what specific uncertainties you had about the paper/parasite/score assignment.

1. Initial the parasite species you’ve just scored (WhoBy), enter the date of completion (DateEntry).

**Notes about the allpara3 spreadsheet**

In the first column, “ParasiteCorrectedName”, you will find the Latin binomial for the parasite. Many of these parasites are not identified to the species level. For example, the first entry is “Acanthocephalus.NA” and the fourth entry is “Acanthocephalus.sp”. When you come across an entry that only has a Genus designation but no species, **mark “1” in the GenusOnly column** (for parasites with both genus and species names, **mark “0” in this column**)**.** Then, **proceed to follow the coding protocol above**. You will find that while some parasite groups are well studied to the species level, many others are not well studied and are therefore only identified down to the genus level. However, these parasite genera might still be known human parasites, and known to be transmitted from a particular vertebrate reservoir. Make copious notes on these parasites if you need to, and flag any papers that lead you to assign your final status code.

If you need to obtain a hardcopy of a paper from the Science Library, proceed to enter the bibliographic information into the Zotero library. In the spreadsheet, mark “get from library” in the PrintRef column if you plan to get the paper in the near future (see me for copy card). After you get the paper, update your entry to “Author et al. 2012” format (in the PrintRef column).