Information on BIOL 375 Paper

*Due the week before the final exam (you can turn it in earlier if you want)
*Worth 100 points
*Length: 500 words (about 2 pages) typed, double-spaced
*Get papers in pdf form off class website, or from Hamilton library

What is it?
*A critical comment on 1 of 5 original research papers, (you choose the paper) designed
to get you to use critical thinking concepts and tools and apply to science. It is NOT a
book report; do NOT explain experimental design.

What is critical thinking?
-It questions information, conclusions, and points of view.
-Much of our own thinking, left to itself, is biased, distorted, partial, uninformed, or
prejudiced.

A critical thinker:
- Raises vital questions and problems, formulating them clearly and precisely.
- Gathers and assesses relevant information, using abstract ideas to interpret
effectively.
- Comes to a well-reasoned conclusion and solutions, testing them against relevant
criteria and standards
- Uses alternative systems of thought, recognizing assumptions, implications, and
practical consequences
- Communicates effectively with others in figuring out solutions to complex
problems.

Zebrafish Paper: Asks if we can experimentally identify by mutagenesis which genes
are critical in embryonic development and at what stage.

Mouse Paper: How new genes come into existence, and how selection acts on them.

Fungal Paper: How a small genome can serve as a model for identifying unknown
genomes, and understanding structure and function in related organisms with much more
DNA.

Prokaryote Paper: Suggests it is possible to accurately reconstruct ancient genome
fusions in order to understand the origin of the earliest eukaryotic cells.

Elephant Paper: Uses molecular population genetics to pinpoint the source of ivory and
give new tools to conservation biologists attempting to stop illegal poaching.