Exam replacement papers

As described in the course syllabus, any one of exams 1-3 may be replaced/substituted by a written paper (10-12 pages, double spaced, excluding references and figures) on an approved topic related to the exam being replaced. The final exam score cannot be replaced with a written paper. All papers are due by 5 PM Mon 29 April 2013.

Instructions for formatting and submission:

Papers should be 12-15 pages in length (~3000-4000 words), excluding references.

Papers should be submitted in 12 point Times, double-spaced, with 1” margins all around.

Papers should include a cover page with a title, your name, class (Biol 2021), date, and specifying which exam (1-3) the paper is replacing.

Include a reference list of at least 15 sources consulted, with proper attributions in the body of your paper (no more than three sources can be to a website). Be careful to give proper attribution to all others work in the body of your paper... plagiarism will not be tolerated!

* “Plagiarism means the intentional unacknowledged use or incorporation of any other person's work in, or as a basis for, one’s own work offered for academic consideration or credit or for public presentation. Plagiarism includes, but is not limited to, representing as one’s own, without attribution, any other individual’s words, phrasing, ideas, sequence of ideas, information or any other mode or content of expression.” University Policies and Procedures 6-400, 1B2c.

Note: All papers may be submitted for on-line plagiarism detection.

There is no limit to the number of figures, but figures and captions are excluded from the page count, so don’t overdo it. Each figure should include an explanatory caption or legend. You may include figures that you have created, or those from texts or articles you have consulted. However, all figures must be properly attributed in the figure legend (ie: from Alberts et al Essential Cell Biology Figure 16-5. Garland Publishing).

Figures and captions can be inserted in the text where referred to, or appended to the paper following the references, at your convenience.

Papers should be submitted as PDF documents, no later than 5 PM, Mon 29 April 2013. Please e-mail your paper to gard@biology.utah.edu with the subject line “Biol 2021 paper” so that my filters will sort your submission to the correct mailbox.

Grading: A paper will be assigned a numerical score of up to 100 points, according to the quality of its content and writing. This score will then replace the appropriate exam score for determination of the student’s grade.

Optional revisions: Papers submitted by 5 PM Monday 8 April 2013 will be read and assigned a preliminary score and returned to students with comments on how they might be improved (no later than Thurs 18 April). Students may then revise their papers, and submit for final grading by 5 PM, Mon 29 April 2013, as described above. In the event that a revised paper isn’t submitted, the preliminary score will entered as the final score.
Potential topics: A list of possible paper topics, sorted by exam, can be found below. Note that this list is NOT exhaustive, but is presented to give you some ideas. If you have an idea for a topic not on this list, please come talk to me about it.

Exam #1: Evolution, chemistry, proteins, membranes, and energetics.

The RNA world. Review and comment on evidence supporting the hypothesis that the first self-replicating systems used RNA as both a mechanism of inheritance and the catalysts for biological reactions.

Prokaryotes with organelles and compartments? Distinguishing prokaryotes and eukaryotes in the age of genomics...

The structure, function, and/or evolution of biological membranes.

From endosymbionts to organelles: the origins or mitochondria and/or chloroplasts.

Exam #2: Metabolism (glycolysis, citric acid cycle, Ox-phos and photosynthesis) and the “Central Dogma.

Evolution of a rotary motor: V-type ATPases...

The Double Helix: the discovery of the structure of DNA...

Are viruses alive? The varied infectious cycles of viruses...

Viruses as models for cell biology...


Exam #3: Translation and protein folding, protein targeting, and endocytosis.

A fortunate accident or evolution: the origin of the genetic code...

HSPs: chaperones and protein folding...

Can proteins be infectious? Prions and protein folding diseases...

Proteosomes and MVBs: The role(s) of ubiquitin in protein degradation...

What LDL taught us about receptor-mediated endocytosis...