

Guidelines for Written Exercises
Animal Science 300
Spring, 2008

The Written Exercises provide an opportunity for you to explore reproductive physiology topics **of special interest to you** and improve your grade in the course. The topics may be in any of the following areas:

- Reproductive biology, physiology or biochemistry;
- Application of some aspect of reproductive biology to reproductive technology (A.I., E.T., I.V.F., cloning, etc.); or
- Reproductive management with emphasis on physiological regulation.

While topics should be developed around the information and principles presented in lecture (or lab), the focus should be on special features of the topic you have chosen which were **not covered extensively in the lecture course**. Topics related to non-domestic species and humans are acceptable.

Written exercises may be a(n):

- I. original written report on a specific topic;
- II. synopsis and evaluation of current research articles in peer-reviewed reproduction journals;
- III. and/or popular press or mass media articles on contemporary "news and views" related to reproduction.

I. Written Reports (10 points)

Written reports must be **original** and **current**. Do not copy from friends, books or other sources and be sure that information obtained from older sources **is still valid**. Use the most current resources available that are appropriate to your topic. Refer to the Reference List on the course web site for journals and books on reproduction as a start. Use Mann Gateway to access the Cornell Online catalogue and reference databases such as Agricola, Biosis, and Medline.

The format of the paper may vary somewhat depending upon the topic. However, the following guidelines will apply to most topics.

A. Topics must be approved. Dr. Parks or one of the Teaching Assistants can discuss your topic with you and help you to focus your thoughts and efforts a bit. Ideas for topics may be found on the lecture schedule, lecture outlines, mimeographs and in texts and journals located in Mann Library.

B. The paper should be organized as follows:

1. **Title Page** - the title page **must** include:

A. Title

B. Name

C. Course

D. Date

2. **Outline** - a brief but formal outline will help you organize your thoughts and write your paper. **Include the outline with your report.**

3. **Body** - this should be organized to include a brief Introduction, other sub-topics pertinent to the subject of the paper and a summary.

4. **Tables and Figures** - tables, graphs, photographs, illustrations or other figures may be used. These may be included within the text at the point of reference or appended together at the end of the text. The meaning of each table and figure should be clear to the reader from the titles and legends.

5. **References** - all books, journal articles, web sites, and other references should be cited **within the text** and **listed at the end of the text**. Instructions on the style and form for citing and listing references are posted on the course web site.

C. Papers **must** be typed, **double-spaced**, and the body of the text should be **1200 to 1500 words** (~6 pages at 12 characters/inch).

II. Evaluating Scientific Papers (5 points each)

The objective of this option is to encourage you to read scientific articles *more carefully and critically*, and be able to:

- increase your knowledge and understanding of the topic;
- recognize strengths and weaknesses of the work;
- interpret results correctly;
- question points which are not addressed satisfactorily; and
- consider how the information relates to future directions in the subject area.

The following guidelines include some criteria, which can be helpful in evaluating the merits of a scientific paper. Editors of scientific journals often include several of these

guidelines when requesting reviews of manuscripts submitted for publication.

General. Typically, the reader or reviewer will have some background knowledge in the subject area. However, the Introduction to a paper should and usually does provide some background information on the specific topic as well as pertinent references that served as a basis for the research.

Title. The title of an article should reflect accurately its content.

Authors. Authors may be recognized as experts in a specific area of research. While this should not create a bias toward the paper one way or the other, some familiarity with specific authors can help in understanding the general approach to a research project and provide some level of confidence in the work based on previous publications.

Introduction. The introduction should include background information on the topic with appropriate references and should state clearly the rationale and objectives for the research.

Materials and Methods. This section should provide the details of the experimental techniques and procedures as well as the experimental design. In evaluating materials and methods, several important questions should be asked. Were procedures already established and referenced? Were new procedures validated? Were appropriate procedures used? Was the hypothesis stated? Was an appropriate experimental design used to test the hypothesis (treatments not confounded, adequate controls)? Were results analyzed statistically?

Results. Results should be represented clearly and concisely in the text, figures and tables. Figures and tables should stand alone and should not be redundant. Relevant information from statistical analyses should be included in this section.

Discussion. This section should provide an interpretation of the results, which is consistent with the data presented. The significance of the results in the context of the research topic should be presented also.

References. All references used in the text except for personal communications should be included in a reference list according to journal format. At a minimum, reference lists typically include authors' names, the journal or reference name, year, volume, and first page, but the format varies with the journal.

Abstract. The abstract should provide a complete but concise summary of the entire article.

Use of Live Vertebrate Animals. When live animals are used in research, evidence should be presented for adherence to accepted guidelines for humane treatment of animals.

Assignment

Using the above guidelines, prepare a **600 word (~3 pages) typewritten synopsis and evaluation for each scientific article.** Articles must have been published in the following journals (in Mann or Vet School libraries and most are accessible online) since August, 2006. You are encouraged to refer to other references in preparing your paper. You are not responsible for all technical details about laboratory equipment and techniques, reagents, statistical methods, etc., but your synopsis should reflect a reasonable effort to evaluate how the work was completed, presented, and interpreted by the authors.

- Biology of Reproduction
- Reproduction
- Reproduction, Fertility, and Development
- Reproduction in Domestic Animals
- Reproductive Biology and Endocrinology
- Endocrinology
- Reproductive Toxicology
- Journal of Andrology
- Theriogenology
- Development
- Developmental Biology
- Journal of Animal Science
- Journal of Dairy Science

III. Contemporary News and Views (1 point each)

The objective of this option is to encourage students to recognize contemporary topics in reproduction as they appear in the popular press and other mass media and be able to evaluate their validity and significance based on the principles of basic reproductive physiology presented in the course. *What is the difference between reproductive and therapeutic cloning? How does Viagra work? What is the state of the art for cryogenics? Is RU486 a contraceptive or abortive agent? How feasible is sex pre-selection in humans?*

Assignment

Identify a contemporary topic in reproduction in a local or regional newspaper, magazine, billboard, radio or television advertisement, etc. Document the source, summarize or explain the topic in general terms, and comment on the validity and/or significance of the topic based on information presented in the text or lecture. Submit a written synopsis of the assignment ~ 1 double-spaced, typewritten page and attach the original or copy of the source where feasible. The spirit of this assignment is to observe what is being said or written about topics in reproduction various media **other than the internet**, although you may include internet information on the topic when writing your synopsis.

IV. Grading

You may use any combination of written assignments toward 10% of the final course grade (10 points).

You may also submit additional Scientific Paper Evaluations (**1 point each**) or News and Views (**½ point each**) for up to 2 additional points for extra credit.

Dr. Parks will grade all written assignments. For full credit, assignments must be thoughtfully and carefully written. Assignments will be discounted if syntax, grammar and punctuation detract from the paper, so **proofread your paper and check spelling and grammar**.

Required written assignments (10 points) may be turned in at any time through **April 11**. Late assignments will be discounted 5% per day. Work done for extra credit must be submitted by **April 25**.