

BIO 559: Special Topics in Physiology

How We Do It: The Development, Physiology, and Evolution of Human Reproduction

Instructor: Dr. Amy Worthington
Office hours: Anytime by request

Required Materials

- *How We Do It: The Evolution and Future of Human Reproduction* by Robert Martin

Course Goals

By focusing on a narrow spectrum of topics, this course is designed to give you an appreciation of the depth and complexity of the human reproductive system at genetic, cellular, physiological, and population, and evolutionary scales. Importantly, you will gain the ability to approach an unfamiliar topic and learn about it independently through the use of appropriate reference materials. This will be in large part due to experience in a) locating materials effectively on scientific literature databases, b) reading primary peer-reviewed publications critically, and c) synthesizing ideas and concepts from multiple sources into a cohesive knowledge base. In addition, you will improve your ability to communicate about complex biological topics in an effective manner in both verbal and written formats, and to both layperson and academic audiences.

Magis Core Objectives

This course fulfills the Designated Oral and Written Communications requirements of the Magis Core Curriculum. Specifically, by the end of the course you will:

- Adapt your content and style of communication to a variety of rhetorical and aesthetic situations.
- Effectively tailor use of oral, written, and non-verbal language for the appropriate audience, occasion, and context.
- Review your own work critically, employing creative thinking and problem-solving in the process of revision and editing.

Fit to Core and Mission

The ability to communicate information and ideas effectively is a critical skill for any scholar, and ideally should reflect an ability to present in a variety of modes and styles. For students of science in particular, clear communication can be a challenge given the wide diversity of background knowledge and expectations that intended audiences may have. For examples, oral and written presentations intended for specialists are typically carried out in a more formal style following specific, agreed upon conventions. Alternatively, presenting scientific information to non-scientific audiences in a way that

makes the content accessible and engaging is a different challenge. In this course, communications skills for both types of audiences will be developed, helping to train students within the healthcare professions to effectively communicate important scientific findings, treatments, and health information to diverse audiences.

Course Structure

Online Discussion Boards

- Each week, an online discussion board will be opened and you will be assigned a random group of 2-4 fellow students to discuss and solve a series of challenging questions regarding the material covered in class that week. A minimum of three meaningful posts are required for each discussion board.
- The goal of these discussion boards is to encourage you to actively apply the knowledge you learned that week and help you synthesize what you have learned to increase your long-term retention of the material.
- Scores will be based on active participation, significance, and completion.

In-Class Discussions

- These student-led discussions will be based on the assigned podcasts and readings (both popular and peer-reviewed) and are designed to help you practice critical thinking, analysis, and communication skills.
- Students are expected to attend class prepared to participate in these discussions by reviewing material from relevant lectures, completing and submitting the scientific article review worksheet for each article assigned, and actively contributing to the discussion.
- Once during the semester, you will be required to lead an article discussion. You will be graded on your ability to direct the conversation and engage others.

Written assignments (See attached assignment descriptions)

- There are two written assignments that will cover the same emerging reproductive health topic of your choice. A list of interesting, but rarely taught about topics will be provided to you by your instructor. Additional topics will be considered if you choose to propose one.
- **Popular layperson article** – Your first written assignment will be to write a short popular article on your topic that could appeal to a layperson with limited knowledge of the reproductive system. Your main objective is to inform the reader while at the same time making the article appealing and entertaining.
- **Scholarly literature review article** – Your second written assignment will be to write a more comprehensive scholarly literature review directed at a scientific audience. The purpose of this paper is to present a coherent review of what is currently understood about the topic and what we have yet to learn. This paper will be supported by primary literature from peer-reviewed scientific journals.
 - **Peer-review of popular article** – You will also practice your communication skills by critically reviewing your peer's writing and providing constructive feedback on their work.

Oral presentations (See attached assignment descriptions)

- **Layperson oral presentation** – This is a short 5-minute “sex talk” to a person with limited knowledge of the reproductive system. Your main objective is to inform the listener of how some aspect of the human reproductive system works. You will be graded on originality, how well you convey complex ideas to a layperson, and also how well you are able to engage the listener.
- **Scholarly oral presentation** – This is a 15-minute mini-seminar to the class on the same topic as your scholarly literature review with the purpose being to inform your classmates of what you learned about your chosen topic. You will also be expected to answer questions from your classmates and instructor following your presentation.
 - **Peer-review of scholarly presentations** – You will practice your oral communication skills by critically reviewing your peer’s presentations and providing constructive feedback on their seminars

Take-home exam:

- There is a single comprehensive take-home exam at the end of this course. It will be a mix of short answer and essay questions. You will be allowed to work with a partner for a portion of this exam.

Assessment & Grade Scale

Activity	Points	Total
Online discussion boards (x 10)		
– 3 posts/board	9 pts each	90 pts
In-Class discussions (x 10) (+1 free absence)		
– Intro worksheet	10 pts	10 pts
– Participation	4 pts each	40 pts
– Presentation	20 pts	20 pts
Oral Presentations		
– Lay-person	40 pts	110 pts
– Scholarly	50 pts	
– Peer-review	20 pts	
Popular science article		
– First draft	20 pts	90 pts
– Peer review	20 pts	
– Final article	50 pts	
Scholarly review article		
– Outline	10 pts	100 pts
– First draft	30 pts	
– Final draft	60 pts	
Take-home exam	100 pts	100 pts

Grade	Percentage
A	93 – 100
A-	90 – 92.9
B+	87 – 89.9
B	83 – 86.9
B-	80 – 82.9
C+	77 – 79.9
C	73 – 76.9
C-	70 – 72.9
D	60 – 69.9
F	59.9 and below

Assistance

I encourage you to see me if you need help or have other concerns you wish to discuss, and I'm happy to meet with you at any time that is mutually convenient for us.

If you have chronic personal or academic issues that you feel are affecting your ability to participate in this class and are harming your grade, please come see me ASAP. I understand that students are people too and that you all have events happening in your lives well outside of your control. While you are welcome to share your personal challenges with me, I do not require that you confide in me about your specific situation, only that we have an open conversation about what academic challenges you are having and what resources or accommodations you may need moving forward to prevent you being punished academically. Chronic mental health issues, for whatever reasons may be the cause, will be taken seriously and be accommodated for in the same manner as chronic illness, loss of loved ones, unexpected traumatic events, etc.

Learning Accommodations

If you have an identified learning need that requires accommodation, please let me know, and contact the Student Support Services if you have not already done so.

Fostering a Safe Space

Due to the personal nature of the topics covered in this course, our classroom needs to be a safe space. **As part of that safe space, we should speak respectfully to and with each other, and not tell people outside of our classroom personal stories that others have shared in confidence.** Additionally, we need to ensure that what happens in our classroom stays in the classroom. For this reason, all course materials, including online discussions (and solutions), as well as all lecture and discussion materials (PowerPoint slides, videos, lecture and discussion recordings) that are posted on the course BlueLine site are considered to be copyrighted and are intended to be used only by students enrolled in that class, for the purposes of fulfilling the course objectives. Only the instructor may record common class sessions. Only the instructor may distribute any and all recorded materials, including individual student discussion posts. Sharing any of these materials with others outside of the course will be considered "misuse of academic resources," as defined in the Creighton University Student Handbook as an act of academic misconduct, and students can be penalized, up to and including failure of the course.

Tentative Course Schedule

Week/Day		Date	Topic	Discuss. Board	Due
1	W	1/12	Introduction & sign-ups		Choose paper topic
	F	1/14	Scientific Article Workshop		
2	M	1/17	<i>NO CLASS – MLK JR. DAY</i>		Intro worksheet
	W	1/19	Popular writing workshop		
	F	1/21	Discussion Leader Workshop		
3	M	1/24	Evolution of sex and the sexes		Popular 1 st draft
	W	1/26	Development of sex & genitals		
	F	1/28	In-Class Discussion 1		
4	M	1/31	Hormonal control of reproduction	#1 due	Popular peer review
	W	2/2	Puberty & secondary sex traits		
	F	2/4	In-Class Discussion 2		
5	M	2/7	PGCs & gamete formation	#2 due	Popular final draft
	W	2/9	Human mating systems		
	F	2/11	In-Class Discussion 3		
6	M	2/14	Spermatogenesis & sperm	#3 due	Scholarly outline
	W	2/16	Erection & ejaculation		
	F	2/18	In-Class Discussion 4		
7	M	2/21	Folliculogenesis & ovulation	#4 due	
	W	2/23	Menstruation & cycles		
	F	2/25	In-Class Discussion 5		
8	M	2/28	Sex & orgasms	#5 due	Scholarly 1 st draft
	W	3/2	Scholarly Writing Workshop		
	F	3/4	In-Class Discussion 6		
9	M-F	3/7-11	<i>NO CLASS – SPRING BREAK</i>		
10	M	3/14	Capacitation & fertilization	#6 due	
	W	3/16	Implantation & placentation		
	F	3/18	In-Class Discussion 7		
11	M	3/21	Recognition of pregnancy	#7 due	Digital “sex talk”
	W	3/23	Contraception mechanisms		
	F	3/25	In-Class Discussion 8		
12	M	3/28	Pregnancy & maternal conflict	#8 due	
	W	3/30	Infertility & miscarriage		
	F	4/1	In-Class Discussion 9		
13	M	4/4	Labor & delivery	#9 due	Scholarly final draft
	W	4/6	Lactation & Nursing		
	F	4/8	In-Class Discussion 10		
14	M	4/11	Scholarly Presentation Workshop	#10 due	
	W	4/13	In-Class Discussion 11		
	F	4/15	<i>NO CLASS – EASTER BREAK</i>		
15	M-F	4/18	<i>NO CLASS – EASTER BREAK</i>		
		4/20-22	Oral presentations & Peer reviews		
16	M-F	4/25-29	Oral presentations & Peer reviews		
17	M	5/2	Oral presentations & Peer reviews		Take-home Exam

Discussion Readings

Discussion	Additional Readings or Podcasts
Podcasts (Fri 1/14)	PODCAST – Radio Lab: Dana
Popular (Wed 1/19)	POPULAR – Anglerfish fuse during sex POPULAR – Shots work better than pills to prevent HIV
Discussions (Fri 1/21)	ARTICLE – 5a-reductase activity and PCOS
Discussion 1 (Fri 1/28)	PODCAST – Radio Lab: X & Y HWDI CH.1 – Sperm & Eggs ARTICLE 1 – <i>SRY: the master switch for sex</i>
Discussion 2 (Fri 2/4)	PODCAST – Radio Lab: Dutee ARTICLE 2 – Reproduction and health ARTICLE 3 – Chemical effects on puberty
Discussion 3 (Fri 2/11)	PODCAST – Radio Lab: Primordial Journey HWDI CH.3 – Mating to Conception ARTICLE 4 – Oocytes from XY females
Discussion 4 (Fri 2/18)	PODCAST – Radio Lab: Sperm ARTICLE 5 – Finding male infertility genes ARTICLE 6 – Testicular microbiome in men
Discussion 5 (Fri 2/25)	POPULAR – The future of reproduction ARTICLE 7 – Primordial follicle development ARTICLE 8 – New endometriosis treatments
Discussion 6 (Fri 3/4)	PODCAST – Radio Lab: Sex Ed PODCAST – The Birds and the Bees: How to Talk to Children About Sex ARTICLE 9 – Why don't all parents talk about this stuff?
Discussion 7 (Fri 3/18)	PODCAST – Radio Lab: Fronads ARTICLE 10 – Sperm chemorepulsion ARTICLE 11 – Impaired embryo selection
Discussion 8 (Fri 3/25)	HWDI CH.8 – Monkeying w/ reproduction ARTICLE 12 – Comparison of ectopic pregnancies ARTICLE 13 – Emergency contraception
Discussion 9 (Fri 4/1)	HWDI CH.4 – Long pregnancies and births ARTICLE 14 – Maternal-fetal immune activity
Discussion 10 (Fri 4/8)	HWDI CH.5 – Growing a large brain ARTICLE 15 – Variation in birth canal shape ARTICLE 16 – Cervical ripening using PGs
Discussion 11 (Wed 4/13)	HWDI CH.6 – Feeding babies ARTICLE 17 – Reproduction predicts aging ARTICLE 18 – Maximum shelf-life of oocytes

Assignment Description: Popular Layperson Article

Objective

Regardless of the career you pursue with your biology education, you will likely have to read highly technical scientific writing, interpret it, and then synthesize it into a more understandable form for a wider layperson audience. Further, you will need to take the complex jargon and sometimes dry scientific information and turn it into an exciting topic for non-specialists, making it clear why they should listen, learn, and care about what you have to say. For this assignment, you will choose a reproductive topic of interest to you from a list provided by your instructor, and then write a popular science article about the subject. The first draft of your article will be submitted for peer-review, and the constructive criticism gained from the reviews will be used to help revise your article into a high-quality article that has broad appeal to the public.

Writing style

Popular science articles are normally short (600-1000 words), informative pieces written in a newspaper-style that covers a focused topic of interest. They are written in a style that appeals to people who don't otherwise read science news and likely have little background knowledge to draw upon (i.e. entertaining and with little jargon). In writing a popular news article, you should adopt the voice of a science journalist, that is, be engaging to draw readers into your article. Focus on the main points, the key questions, the most critical methods, and the primary conclusions, rather than on the minutia. Finally, you should connect your topic to the broader world of biology by explaining why the topic of your article is important and why they as non-scientists should care.

Format

Your title should be bolded and centered at the top of the page in 14 pt. font. Choose a concise, informative, and clever title similar to what you might read on NPR or Science Daily. Underneath the title, include your name and the "date published" in size 10 font. The article itself should be single-spaced, with 1-inch margins, in 12 pt. font Arial or Helvetica font. At the end for your article in 10 pt. font, include a 2-3 sentence biography of yourself that verifies your expertise on the topic. This is frequently done because these articles are often written by free-lance writers that independently submit their work to be published. Beneath the biography, include a single line with the final word count of your article (not including title, author, date published, biography, or references). Finally, at the end of your popular science article in 10 pt. font, type out the full list of peer-reviewed scientific references you used as sources in your paper in Harvard Style (i.e. Authors, Year, Title, Volume, Page Numbers). Make sure you include in-text citations of these sources within your article.

Traits of good popular science articles

- The scientific information drawn upon to write the article (background, original research articles, conclusions, etc.) should be understandable to an audience of non-scientists
- The article is clearly and concisely written in the voice of a scientific journalist.
- There is little or no scientific jargon.
- The article is written mostly in the active, rather than passive voice.
- The main points, key questions, and primary conclusions are the focus rather than minute details of the research used as references.
- The broader significance of the topic is interpreted and summarized for the reader, and the impact of this topic on the reader is clearly stated.
- The story is engaging and interesting to non-scientists. It may even include humor or analogies to common scenarios to increase reader interest.
- The story is short and easy to read in several minutes.

Examples of published articles

- <https://www.npr.org/sections/thesalt/2018/09/18/649139343/doctors-should-send-obese-patients-to-diet-counseling-panel-says-but-many-don-t>
- <https://www.scientificamerican.com/article/olympic-big-air-snowboarders-use-physics-to-their-advantage/>
- <https://www.thedailybeast.com/there-have-been-a-lot-of-earthquakes-lately-dont-panic?ref=scroll>
- <https://www.hakaimagazine.com/news/climate-change-is-good-for-these-crabs-genitals/>

Peer-review

Being a scientist means not only learning about scientific principles through observation and experimentation, but it means communicating those results with other scientists and the public at large. However, publications should always be proofread by people other than the writer to ensure not only that the information presented is factual, but also that it is clearly written and will successfully communicate the ideas to the intended audience. As part of this assignment, you will be given a rubric of what to look for in these popular science articles (the same rubric your instructor will use to grade your final draft) and you will be asked to provide constructive feedback to two of your peers. You will give an outsider perspective on their writing to ensure that it is engaging and includes the many traits that make a popular article successful prior to them submitting their final draft. While you should not be overly harsh or cruel in your reviews, it is unlikely that anyone will write the perfect article in their first draft. You should provide useful, specific, and constructive feedback that will help the author understand what is missing or confusing and how they can make their article more engaging and reach a broader audience. These reviews are worth 20 points of your final grade, and points will be lost if thoughtful constructive feedback is not provided.

Grading Rubric for Popular Science Article

Criteria	Exemplary = 4	Above Average = 3	Adequate = 2	Inadequate = 1
Focus	Purpose of the article is very clear and obvious; easy for non-scientists to understand.	The purpose of the article is clear, but could be more direct; most non-scientists should understand.	The purpose of the article is not particularly clear or easy to identify; non-scientists may have difficulty understanding.	No obvious purpose of what the article is trying to convey; non-scientists will not understand or not care about this article.
Main idea	Exceptionally well-presented; ideas are well-developed, detailed, and supported with evidence.	Well-presented; ideas are developed, detailed, and mostly supported with evidence.	Vague sense of a main idea but not well-developed, ideas weakly supported by evidence.	No main idea; no supporting evidence is presented.
Organization	Well-planned, includes a broad introduction, a clear statement of the main idea, transitions, and a impactful conclusion.	Good overall organization, includes an introduction, a statement of the main idea, transitions, and a logical conclusion.	There is organization, but the “story” trying to be conveyed would be more impactful if the article organized differently.	No sense of organization.
Significance	Main ideas presented are interpreted and their significance is clearly summarized for reader.	Main ideas presented are interpreted and their significance is somewhat summarized for reader.	Main ideas are presented but their importance is not interpreted; reader has to identify significance.	The importance of the ideas presented is unclear and there is no broader significance to the paper.
Style	Sentences are clearly written and concisely convey ideas; sentences are varied in structure.	Sentences are clear, but could be more concise; may show some repetitive sentence structure.	Sentences are generally clear, but may have awkward structure making them difficult to read.	Sentences aren’t clear; the may be run-ons that lack logical transitions.
Engagement	The article is engaging and of interest to non-scientists; many analogies/humor used; the “story” is entertaining.	The article is engaging and of interest to non-scientists; some analogies/humor used; the “story” is interesting.	The article is of interest to non-scientists, but is not particularly engaging or entertaining to read.	The article is not of interest to non-scientists, it lacks a clear story and is boring to read.
Voice	The article is written in an active, confident, and professional voice	The article is written mostly in an active and professional voice	The article is written mostly in passive voice, lacks professional voice.	Written in passive voice and lacks confidence and professionalism.
Word choice	No scientific jargon used.	Minor jargon used.	A lot of jargon is used.	Only jargon is used.
Length	Short and quick to read.	Longer but easy to read.	Longer and difficult to read.	Too long and difficult.
Sources	Sources are exceptionally integrated and effectively support claims presented in the paper.	Sources are used and support claims presented in the paper.	Sources support some claims, but some sources may be missing or inadequate.	The paper does not used adequate sources to support the claims made in the paper.
Grammar/Mechanics	Excellent grammar, spelling, syntax, and/or punctuation.	A few minor errors in grammar, spelling, syntax, and/or punctuation.	Shows a pattern of errors in grammar, spelling, syntax, and/or punctuation	Continuous errors make it difficult to read.

Assignment Description: Scholarly Literature Review Article

Objective

Although personal research experience is important to truly understand how the scientific process works, synthesizing and writing literature reviews of others research in the field is an effective means to increase your own (and others) depth of knowledge. Research reviews are frequently published on a variety of topics and normally function to 1) synthesize disparate research projects that have already been conducted over a broad time range, 2) provide an introduction to a topic for people just getting into the field, 3) identify what is collectively known about a topic, and 4) point out directions of future research that are necessary to fill current knowledge gaps. Already this semester you were tasked with researching a chosen topic in human reproduction and then presenting it to non-specialists in a carefully written popular science article. For this assignment, you must present this same topic in the form of a scholarly review article that synthesizes the current understanding of a topic, presents a survey of the research that has been published, and points to gaps in our knowledge to help inform future avenues of research. You will receive feedback directly from your instructor throughout the semester to help you hone your writing and present the information effectively to moderately informed readers. The first draft of this article will be reviewed by both yourself and your instructor so that you can understand any disparities in how well you presented the material versus how well you thought you presented it.

Presentation style

Scholarly review articles are usually fairly long articles, allowing for the ability to delve quite deeply into the subject matter to create a meaningful synthesis and integration of the current state of knowledge on a given topic. Although the topics presented may be new and challenging for the readers, they should be presented in such a way that they are easy to understand and follow for an audience that has a strong scientific background but who may not be experts in the specific field. You should adopt the voice of an informed, educated person, but also be engaging so as to keep your readers interested and engaged throughout your review. Make sure to focus on the important points of your chosen topic, have a logical organization to the progression of the article, and provide in-text citations for the research and ideas that are being presented.

Format

Your title should be bolded and centered at the top of the page in 14 pt. font. Choose a concise and informative title that encompasses everything addressed in the review. Underneath the title, include your name and the "date submitted" in size 10 font. The review article itself should be double-spaced, with 1-inch margins, in 12 pt. Arial font. The completed review article should be absolutely no shorter than 10 full pages, and no longer than 15 full pages. You are encouraged to use bolded headers to break your article into logical sections and increase the ability of the reader to navigate your review.

Annotated Bibliography

At the end of your review article (and not included in your 10 –15 page count), include the full list of peer-reviewed scientific references you used as sources in your paper in the following style (i.e. Authors. Year. Title. *Journal* Volume: Pages.) These should be single spaced and use a ½” hanging indent to look like the example citation below. You should have absolutely no fewer than 10 references, although more are recommended.

Underneath each reference, you are must write a summary of the article, identify the type of article it was (primary research, review, meta-analysis, clinical, etc.) and provide an explanation of its importance to your review. This is to ensure that you have fully read the articles being cited and that you have your own notes about the article to prevent any incidence of plagiarism. Make sure you include in-text citations of these sources within your article using the (Villarreal et al. 2018) format.

Citation example:

Villarreal AE, Godin JGJ, & SM Bertram. 2018. Influence of operational sex ratio on mutual mate choice in the Jamaican field cricket (*Gryllus assimilis*): Testing the predictions of the switch point theorem. *Ethology* 124:816-828.

- Summary: This was a primary research article that carefully tested the hypothesis that... Their results supported....This is relevant to my review because...(This should be approximately 1/3 of a page and include any relevant information that you extracted from the article as written in your own words).

Traits of a good review scholarly article

- It is understandable to the intended audience is written using professional, confident language. You should use the voice of an expert.
- The chosen topic is of a manageable size and to address in sufficient detail in 10-15 pages – not be too broad or too specific. It should address developmental, physiological, and evolutionary insights into human reproduction as appropriate.
- All unfamiliar vocabulary terms are properly defined upon first use to the level appropriate to the topic being addressed, keeping in mind that your readers have some scientific background (consider your fellow students in this class).
- Only factual, unbiased scientific evidence that accurately reflects our current knowledge as supported by peer-reviewed research is presented. In no way should your personal, religious, or political views be incorporated into the review to persuade the listener of a particular point of view. However, you can try to persuade your audience if all arguments are supported strictly by rigorous scientific fact (e.g. “There is no scientific evidence that women at risk of preterm labor should be prescribed bedrest to prolong their pregnancies (citation)”).
- The progression of the article is logical and easy to follow, with each point building on facts that have already been established. The introductory material is contingent upon what was previously learned in class, so although a brief review of important things that were previously learned is acceptable, the vast majority of the review article should focus on topics not otherwise covered in the class.
- The importance of the topic and current state of knowledge is directly addressed.
- Future directions of research that would increase our knowledge in this area should be proposed.

Resources to consult as you prepare your scholarly review article

- [Ten Simple Rules for Writing a Literature Review by Marco Pautasso](#)
- [Writing a review article by Ross K. Snyder](#)
- [Guidelines for Writing a Review Article by Philip Mayer](#)
- Google examples of review articles *that are on different topics than what you have chosen*. Be careful to avoid focusing too heavy on related reviews as it will influence how you write your own paper and may lead to accidental plagiarism.

Outline

About five weeks into the semester you need to submit an outline of your scholarly review article. This should be a detailed outline that includes all major headers and subheaders that you intend to use in your review with bulleted lists underneath each detailing the specific points to be addressed in each section of your review article. This outline is your only opportunity to be provided feedback on the scope and organization of your scholarly review article by your instructor before your first draft is due (unless, of course, you visit your instructor during office hours for more input). Please take advantage of this opportunity and do not simply put together an outline last-minute.

First draft

For this draft, you should have a full 10–15 page draft of your article written with most of your citations referenced in-text. Grading of this draft will be mainly on progress *and your own self-reflection of your progress*, although major points will be lost for obvious lack of effort. This will be your last opportunity to receive instructor feedback on your progress before turning in your final draft (unless, of course, you visit your instructor during office hours for more input).

Grading

Your instructor will use the attached grading rubric to assess your scholarly review article. This assignment is collectively worth 100 points of your total grade – 10 points for the outline, 30 points for the first draft, and 60 points for the final draft.

Scholarly Literature Review Article Grading

Name: _____

Title of review: _____

Organization

- Did the introduction establish a clear framework for the review? 0 1 2 3 4 5
- Were the main ideas presented in an orderly and clear manner? 0 1 2 3 4 5
- Were the provided citations helpful to understand the topic? 0 1 2 3 4 5
- Was there a clear take-home message to the review? 0 1 2 3 4 5
- Did the main conclusions logically follow from the material presented? 0 1 2 3 4 5

Knowledge base

- Was proper background information on the topic given to the readers? 0 1 2 3 4 5
- Was the material selected for review appropriate to the topic? 0 1 2 3 4 5
- Was only unbiased scientific evidence used for the review? 0 1 2 3 4 5
- Was enough information given to allow the readers to evaluate the topic? 0 1 2 3 4 5
- Was irrelevant or filler information absent? 0 1 2 3 4 5
- Were technical terms well-defined in language appropriate for the readers?..... 0 1 2 3 4 5
- Were the main issues in this area clearly identified? 0 1 2 3 4 5
- Did the author make meaningful recommendations for future work? 0 1 2 3 4 5
- Did the author seem to have a clear understanding of the material? 0 1 2 3 4 5

Written requirements

- Did the format fit the standards required (font, font size, margins, etc.)? 0 1 2 3 4 5
- Was the review of the appropriate length (10-11 pages)? 0 1 2 3 4 5
- Were bolded headers used to increase readability of the article? 0 1 2 3 4 5
- Were all the citations used high in quality and peer-reviewed? 0 1 2 3 4 5
- Were there a minimum of 10 appropriate citations used as support? 0 1 2 3 4 5
- Were the citations in-text and in the references formatted correctly? 0 1 2 3 4 5

ADDITIONAL COMMENTS **Total points** _____ / 100 → **FINAL SCORE** _____ / 60

Assignment Description: Layperson Oral Presentation

Objective

At some point in your life, you will likely need to teach someone with limited or no knowledge about reproduction what sex is, how it results in offspring, and other pertinent details about the subject. These “sex talks” might be expected (e.g. carefully planned discussions with your own child), or they may come at unexpected and surprising moments (e.g. a discussion with an adult patient that has extreme misunderstandings about their own anatomy and physiology). In either event, you will need to convey important, yet often culturally-sensitive material to people lacking a strong understanding of the human reproductive system, and in many cases you will need to correct misinformation that has been inaccurately taught to them at some point in their lives. For this assignment, you must record a 5-minute “sex talk” on some aspect of reproduction that is imperative for everyone understand. You get to choose the specific topic and who your directed audience is. A list of suggested topics and audiences are listed below, however feel free to be creative. If you are unsure if your choices are acceptable, please run them by your instructor first.

Presentation style

“Sex talks” need to be concise, easy to understand, and most importantly – 100% accurate. They should be understandable for people who have little scientific background knowledge to draw upon (or none in the cases of young children). You should adopt the voice of an informed educated person, but also be engaging and able to use humor or analogies when appropriate. It may be needed to provide a brief description/drawing of relevant anatomy. Make sure to focus on the important points of your chosen topic, make logical steps in the progression of the discussion, and address key misconceptions that often arise regarding the subject. Take care that the level of detail and the maturity of the material aligns with your intended audience.

Format

You will be submitting a digitally recorded video of your talk. How you record, whether anyone besides yourself is featured, the location where you record, and whether any edits, props, or special effects are used is up to you. Your smartphone, a handheld camera, or the webcam on your computer are all easy methods to record your video, just ensure that the audio is clear and understandable. The video itself should be in uploaded onto a private channel on YouTube. To do this, you will need to “Create a video or post” by clicking on the icon of a video camera with a + sign in it in the upper right portion of the screen, then choose “Upload a video”. When prompted, create your own YouTube channel. Next, choose “Private” from the dropdown menu, then drag your video into the “Select files to upload” box. Once the upload is complete, name your video with your full name, include a brief description of your intended audience and specific topic addressed, and make sure the video is set to “Unlisted”. Finally, click “Share” and enter in Dr. Worthington’s email address.

Traits of a good “sex talk”

- It is understandable to the intended audience is presented professionally.
- The chosen topic is of a manageable size to address in sufficient detail in only five minutes. It is not so broad that the talk is superficial in nature and doesn't address any of the underlying physiology related to the topic.
- No scientific jargon is used and any unfamiliar vocabulary terms are properly defined to the level appropriate to the audience.
- Only acceptable terms are used for the topic at hand. No euphemisms or cutesy names are used to replace body parts or other important terms.
- All important points regarding the topic are addressed and each accurately reflects our current knowledge as supported by unbiased scientific research.
- The progression of the discussion is logical and easy to follow, with each point building on facts that have already been established.
- Addresses key misconceptions that many people assume or were inaccurately taught at one point in their lives, but make sure to demonstrate complete respect to your listener and do not shame them for having believed in the misconception.
- The discussion is engaging and interesting to the listener, and the importance of the topic and relevance to their current circumstance is directly addressed.
- In no way should your personal, religious, or political views be incorporated into the talk to persuade the listener to behave in a certain way with regards to sex. Any controversial topics such as monogamy, abstinence, birth control, abortion, gender identity, or sexual preferences must be supported by scientific fact rather than personal preferences.
- The discussion may include humor to diffuse the tension around the sensitive topic or rely on analogies to relate foreign material to something more relatable, but in no way should either be used unprofessionally .
- The presentation is short and easy to follow in approximately five minutes.

Resources to consult as you prepare your presentation

- https://www.youtube.com/watch?v=tUIPhm_f8S0
- https://www.youtube.com/watch?v=FZeb2z_ad1M
- Google other examples! Watching well-executed talks online, watching videos giving advice on how to approach specific topics, or listening to people reflect on the really poor talks they received might provide ideas on the topic you would like to address and how to present it respectfully towards your intended audience.

Grading

You will digitally submit recorded video of your “sex talk”, along with a short worksheet describing your intended audience, targeted topic, and ultimate goal of this specific presentation. You will be given a rubric of what you must include in your oral presentation (the same rubric your instructor will use to grade your final version). Creativity is valued and will be considered for the final grade. Keep your audience in mind as you present your information, and make sure to tailor your talk to these specific people (it is unlikely that you would talk to an 11-year-old boy in the same manner and voice as you would a 23-year-old woman). This assignment is 40 points of your grade.

Potential intended audiences and topics

Below is a non-exhaustive list of potential topics you may want to choose for your presentation. Choose a focused topic that you feel you can adequately and comfortably address in five minutes. Your discussion should focus on the physiology or development of reproduction as opposed to the many equally-important social issues/debates revolving around this topic. This is not because these issues are unimportant or less important than the topics listed below, but rather because this is an upper-level physiology course, therefore your discussion should be based on scientific facts.

Intended audience	Topic ideas
Young child	<ul style="list-style-type: none">• How are babies made?• What is the difference between boys and girls?
Pre-pubescent boy or girl	<ul style="list-style-type: none">• Expected changes to the body• Menstruation – what is it?• Erections – what are they?
Adolescent boy or girl	<ul style="list-style-type: none">• Sex – what is it?• How pregnancy happens How to avoid unwanted pregnancy• Sexually transmitted diseases• Vaccines to reduce cancer risk• Preparing for a health screening
Adult male or woman (either uninformed or has some misconceptions about human reproductive physiology and sex)	<ul style="list-style-type: none">• Timing sex to become pregnant• How ovulation/pregnancy tests work• What is menopause?• Options for erectile dysfunction• Routine testing for STDs• Safe sex techniques
<i>Alternative options exist– be creative!</i>	

Grading Rubric for Layperson Oral Presentation

Criteria	Exemplary = 4	Above Average = 3	Adequate = 2	Inadequate = 1
Intended audience	The topic is appropriate for the intended audience and is addressed at the correct level of understanding and maturity for that audience.	The topic is appropriate for the audience and is mostly addressed at the correct level of understanding and maturity for that audience.	The topic is only moderately appropriate for the audience, and is addressed in such a way that the audience may have difficulty understanding.	The topic is inappropriate for the intended audience and addressed at the wrong level of maturity or understanding to be effective.
Focused topic	Topic was of a manageable length, physiology behind topic addressed in the perfect level of detail for audience.	Topic was of a manageable length, physiology behind topic addressed in an appropriate level of detail.	Topic was slightly too focused or broad, physiology behind topic not addressed in an appropriate level of detail.	Topic was way too specific or broad to be covered correctly, little or no physiology addressed.
Organization	Well-planned, includes an great introduction, a clear message, has easy-to-follow logical transitions, and an impactful conclusion.	Good overall organization, includes an introduction, a main message, logical transitions, and a strong conclusion.	There is some organization, but the message trying to be conveyed would be more impactful if the talk was organized differently.	No sense of organization or a clear message, very difficult to follow, unlikely that a meaningful message was conveyed at all.
Impact	Message was clear, common misconceptions were well-addressed in a highly respectful manner.	Message was clear, common misconceptions were addressed in a mostly respectful manner.	Message was obscure, common misconceptions were only partially addressed or done so disrespectfully.	The importance of the ideas presented was unclear and added to new misconceptions about the topic at hand.
Style	Exceptionally well-presented; ideas/flow well-developed, detailed, ideas conveyed concisely with precision.	Well-presented with logical flow, ideas could have been more concise or presented more directly.	Sentences were generally clear, but the flow and precision of the language made it difficult to understand	Not presented with any confidence or forethought, very difficult to follow and lots of uncomfortable pauses.
Engagement	The talk was engaging and of clearly-stated relevance to the audience; analogies or humor were used respectfully and appropriately	The talk was fairly interesting and of stated relevance to the audience; analogies/humor were used respectfully and appropriately (if included)	The talk was of some relevance to the audience, but it was not particularly engaging to listen to and came across as a lecture.	The talk was boring and there was no statement of its relevance; also lacked any unique methods to try and make it easier to understand.
Voice	The presentation is spoken in a confident, informative, and professional voice	The presentation is spoken in an informative, and professional voice	The presentation is informative, but lacks confidence/professionalism.	The presentation lacks confidence/professionalism, is only a little informative
Word choice	No scientific jargon or slang used; all unfamiliar terms are defined.	Minor jargon used; no slang is used; most unfamiliar terms are defined.	A lot of jargon or slang is used; unfamiliar terms not defined.	Only jargon or unprofessional slang is used.
Length	5 min \pm 30 sec	5 min \pm 1 min	5 min \pm 2 min	5 min \pm >3 min
Based in scientific fact	Discussion is based solely in unbiased scientific facts that are effectively integrated to support all claims.	Discussion is based solely in unbiased scientific facts that support most claims, some claims may lack support.	Scientific facts support some claims, but some statements may be lacking support or are presented in a biased way.	Discussion contains few facts and is based on common misconceptions or biased social/personal views.

Assignment Description: Scholarly Oral Presentation

Objective

Although conducting research (whether in a lab or in the library) to delve into a single topic provides an excellent opportunity to increase your own depth of knowledge for a given subject, it carries much more value when that knowledge is then integrated, synthesized, and shared with others. This semester, you were tasked with researching a chosen topic in human reproduction in great detail, and then presenting that information in carefully written articles for both scholarly and layperson audiences. For this assignment, you must deliver a 15-minute scholarly research oral presentation on the topic you chose. This presentation will be followed by a Q&A period during which the audience will be allowed to ask you – as the local expert – questions on the topic.

Presentation style

Scholarly talks are usually slightly longer than layperson talks, allowing for the ability to delve more deeply into the subject matter to create a meaningful learning experience for the audience. Although the topics presented may be new and challenging for the listeners, they should be presented in such a way that they are easy to understand. They should be understandable for people who have moderate scientific background knowledge to draw upon but who may not be experts in the specific field. You should adopt the voice of an informed, educated person, but also be engaging so as to keep your audience interested and engaged throughout your presentation. Make sure to focus on the important points of your chosen topic, make logical steps in the progression of the lecture, and provide high-quality visuals that augment what you are orally saying to your audience. Additionally, presenting effectively includes having a strong presence on “stage”, meaning that you make frequent eye contact with all audience members, you speak clearly and audibly, and your delivery is confident.

Format

You will present a 15-minute lecture on the topic you chose for your popular and scholarly articles. This talk should include a PowerPoint presentation with visuals that effectively highlight and augment the information being presented. Your audience will be your peers, so you should have a good understanding of their level of knowledge on your topic based on what was covered collectively in class throughout the semester. The presentation should present factual information in a manner that is both interesting and attention-getting for your audience, and it should detail the broader significance of the topic to society. Your presentation will be recorded via Bluecast and may be submitted to the college as an artifact for the Magis Core Oral Designation requirement.

Traits of a good scholarly oral presentation

- It is understandable to the intended audience is presented professionally and with confidence.
- The chosen topic is of a manageable size to address in sufficient detail in twelve minutes. It should address developmental, physiological, and evolutionary insights into human reproduction as appropriate.
- All unfamiliar vocabulary terms are properly defined upon first use to the level appropriate to the topic being addressed.
- Only factual evidence that accurately reflects our current knowledge as supported by unbiased scientific research is presented. In no way should your personal, religious, or political views be incorporated into the talk to persuade the listener of a particular point of view. Although the purpose of this talk is mostly informational, you can try to persuade your audience of something important if all arguments are supported strictly by rigorous scientific fact.
- The progression of the lecture is logical and easy to follow, with each point building on facts that have already been established. The introductory material is contingent upon what was previously learned in class, so although a brief review of important things that were previously learned is acceptable, the vast majority of the lecture should focus on topics not otherwise covered in the class.
- The presentation is engaging and interesting to the audience, and the importance of the topic and relevance to their lives is directly addressed.
- The presentation may include humor as appropriate, but in no way should either be used unprofessionally or be demeaning to anyone.

Grading

You will present your scholarly presentation to the other students in the class towards the end of the semester. Your instructor will use the attached grading sheet to assess your presentation. Additionally, your peers will each evaluate the effectiveness of your presentation and their feedback may influence your grade at your instructor's discretion. This assignment is worth 50 points of your total grade.

Scholarly Oral Presentation Grading

Presenter's Name: _____

Title of presentation: _____

Organization

- | | | | | | |
|--|---|---|---|---|---|
| Did the introduction establish a clear framework for the presentation? | 1 | 2 | 3 | 4 | 5 |
| Were the main ideas presented in an orderly and clear manner? | 1 | 2 | 3 | 4 | 5 |
| Were the provided visuals helpful to understand the topic? | 1 | 2 | 3 | 4 | 5 |
| Was there a clear take-home message to the presentation? | 1 | 2 | 3 | 4 | 5 |
| Did the main conclusions logically follow from the material presented? | 1 | 2 | 3 | 4 | 5 |

Knowledge base

- | | | | | | |
|--|---|---|---|---|---|
| Was proper background information on the topic given to the audience? | 1 | 2 | 3 | 4 | 5 |
| Was the material selected for presentation appropriate to the topic? | 1 | 2 | 3 | 4 | 5 |
| Was only unbiased scientific evidence used during the presentation? | 1 | 2 | 3 | 4 | 5 |
| Was enough information given to allow the audience to evaluate the topic? ... | 1 | 2 | 3 | 4 | 5 |
| Was irrelevant or filler information absent? | 1 | 2 | 3 | 4 | 5 |
| Were technical terms well-defined in language appropriate for the audience? .. | 1 | 2 | 3 | 4 | 5 |
| Were the main issues in this area clearly identified? | 1 | 2 | 3 | 4 | 5 |
| Did the presenter make recommendations for further work in this area? | 1 | 2 | 3 | 4 | 5 |
| Did the presenter have a clear understanding of the material presented? | 1 | 2 | 3 | 4 | 5 |

Presentation skills

- | | | | | | |
|---|---|---|---|---|---|
| Were the PowerPoint slides visually appealing and organized? | 1 | 2 | 3 | 4 | 5 |
| Did the presenter use the appropriate amount of time for their talk? | 1 | 2 | 3 | 4 | 5 |
| Did the presenter maintain audience interest for the entire duration? | 1 | 2 | 3 | 4 | 5 |
| Did the presenter make eye contact and appropriate body gestures? | 1 | 2 | 3 | 4 | 5 |
| Did the presenter speak clearly, loudly, and confidently? | 1 | 2 | 3 | 4 | 5 |
| Was the presenter responsive to audience questions? | 1 | 2 | 3 | 4 | 5 |

ADDITIONAL COMMENTS

TOTAL SCORE _____ / 10

How We Do It: The Development, Physiology, and Evolution of Human Reproduction (BIO 559)

Fit to University Core and Mission

The ability to communicate information and ideas effectively is a critical skill for any scholar, and ideally should reflect an ability to present in a variety of modes and styles. For students of science in particular, clear communication can be a challenge given the wide diversity of background knowledge and expectations that intended audiences may have. For examples, oral and written presentations intended for specialists are typically carried out in a more formal style following specific, agreed upon conventions. Alternatively, presenting scientific information to non-scientific audiences in a way that makes the content accessible and engaging is a different challenge. In this course, communications skills for both types of audiences will be developed, helping to train students within the healthcare professions to effectively communicate important scientific findings, treatments, and health information to diverse audiences.

Designated Oral Communication Objective 4.P.1

Objective:	Students will effectively design a formal oral presentation appropriate for a specific disciplinary audience, e.g. topic, purpose, supporting material, organization, and language.
Supporting activities:	<ol style="list-style-type: none">1. Students will record a 5-min layperson presentation on a reproductive health topic of their choice and share this video on YouTube after instructor consent.2. Students will present a 15-min scholarly oral seminar to the class on a reproductive health topic of their choice.
Assessment:	Supporting activities will be assessed by the instructor using the attached rubric.

Designated Oral Communication Objective 4.P.2 (o)

Objective:	Students will effectively deliver a formal oral presentation appropriate for a specific disciplinary audience, e.g. vocal variety, articulation, and physical behaviors.
Supporting activities:	<ol style="list-style-type: none">1. Students will record a 5-min layperson presentation on a reproductive health topic of their choice and share this video on YouTube after instructor consent.2. Students will present a 15-min scholarly oral seminar to the class on a reproductive health topic of their choice.
Assessment:	Supporting activities will be assessed by the instructor using the attached rubric.

Designated Written Communication Objective 4.P.1

Objective:	Students will adapt the content and style of communication to a variety of rhetorical and aesthetic situations.
Supporting activities:	<ol style="list-style-type: none">1. Students will create a short popular science news article on an emerging reproductive health topic of their choice.2. Students will write a 10-page scholarly literature review on an emerging reproductive health topic of their choice.
Assessment:	Supporting activities will be assessed by the instructor using the attached rubric.

Designated Written Communication Objective 4.P.2 (w)

Objective:	Students will effectively use written language appropriate to the audience, occasion, and context.
Supporting activities:	<ol style="list-style-type: none">1. Students will create a short popular science news article on an emerging reproductive health topic of their choice.2. Students will write a 10-page scholarly literature review on an emerging reproductive health topic of their choice.
Assessment:	Supporting activities will be assessed by the instructor using the attached rubric.

Designated Written Communication Objective 4.R.2

Objective:	Students will review their own work critically, employing creative thinking and problem solving in the process of revision and editing.
Supporting activities:	Students will write a 10-page scholarly literature review on an emerging reproductive health topic of their choice. They will submit their first draft with a self-critique of their work using the project rubric, and will then incorporate instructor and self-feedback into the final draft.
Assessment:	Supporting activities will be assessed by the instructor using the attached rubric.

Designated Oral Communication Assessment Rubric

Magis Core Curriculum

Number	Objective	Advanced (4)	Competent (3)	Progressing (2)	Beginning (1)
4.P.1	Students will adapt the content and style of communication to a variety of rhetorical and aesthetic situations.	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task (s) including organization, content, presentation, formatting, and stylistic choices.	Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices .	Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation.	Attempts to use a consistent system for basic organization and presentation.
4.P.2 (o)	Students will effectively use oral ... and/or non-verbal language appropriate to the audience, occasion, and context.	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience. Delivery techniques make the presentation compelling, and speaker appears polished and confident.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience. Delivery techniques make the presentation interesting, and speaker appears comfortable.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience. Delivery techniques make the presentation understandable, and speaker appears tentative.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience. Delivery techniques detract from the understandability of the presentation, and speaker appears uncomfortable.

Designated Written Communication Assessment Rubric

Magis Core Curriculum

Number	Objective	Advanced (4)	Competent (3)	Progressing (2)	Beginning (1)
4.R.2	Students will review their own work critically, employing creative thinking and problem solving in the process of revision and editing.	Not only develops a logical, consistent plan to solve problem in one's work, but recognizes consequences of solution and can articulate reason for choosing solution. Implements the solution in a manner that addresses thoroughly and deeply multiple contextual factors of the problem.	Having selected from among alternatives, develops a logical, consistent plan to solve the problem in one's work. Implements the solution in a manner that addresses multiple contextual factors of the problem in a surface manner.	Considers and rejects less acceptable approaches to solving problem in one's work. Proposes one solution/hypothesis that is "off the shelf" rather than individually designed to address the specific contextual factors of the problem.	Only a single approach is considered and is used to solve the problem in one's work. Proposes a solution/hypothesis that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.
4.P.1	Students will adapt the content and style of communication to a variety of rhetorical and aesthetic situations.	Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task (s) including organization, content, presentation, formatting, and stylistic choices.	Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices .	Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation.	Attempts to use a consistent system for basic organization and presentation.
4.P.2 (w)	Students will effectively use ... written ... language appropriate to the audience, occasion, and context.	Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work.	Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s) (e.g., the task aligns with audience, purpose, and context).	Demonstrates awareness of context, audience, purpose, and to the assigned tasks(s) (e.g., begins to show awareness of audience's perceptions and assumptions).	Demonstrates minimal attention to context, audience, purpose, and to the assigned tasks(s) (e.g., expectation of instructor or self as audience).