

**Biology 3899: Scientific Literature**  
**Seattle Pacific University**  
**Winter Quarter, 2013**

Meets every Friday, 12:30 pm – 1:20 pm in Otto Miller 124

**Instructor:** Jenny Tenlen, Ph.D.

*Office:* Eaton 113  
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*Office hours:*  
MWF, 10:00 am – 12:00 pm, or by appointment, or feel free to stop by at any time

*“Seattle Pacific University seeks to change the world and engage the culture by graduating students of competence and character, cultivating people of wisdom, and modeling a grace-filled community.”*  
[SPU Mission Statement]

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### **Textbooks and other materials**

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*Required textbook:*

None – all papers will be posted to Blackboard. You must print them off and bring a hard copy to class with you. Don’t just read the papers on your computer – mark them up, make notes, ask questions!

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### **Course Description**

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BIO 3899 is a one-credit course designed to give you more practice in reading and comprehending scientific literature. This quarter, we will focus on the topic of Sex Determination – how are males and females specified during development? There are many possible questions we could explore with this topic. For example, what are the molecular mechanisms that activate “male” or “female” pathways in humans? Are sex determination pathways in mammals, flies and worms really that similar? How can temperature and other environmental factors influence gender? How does sex reversal work? Why do we actually need two sexes? Each week we will read and discuss a paper chosen by a pair/group of your classmates. (You will sign up for your preferred week) Each student is responsible for reading the paper, even if it’s not your week to lead discussion.

## Syllabus

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- Please note: readings will be posted to Blackboard as each group of students select the paper they will lead for discussion.

Date	Topic	Paper Selection Due Date
Jan. 4, 2013	Course overview Introduction to sex determination Discussion Leader sign-ups	
Jan. 11, 2013	Paper discussion: "Male development of chromosomally female mice transgenic for Sry" Discussion Leader: Dr. Tenlen <b>Due:</b> Reading Response #1	
Jan. 18, 2013		Fri., Jan. 11
Jan. 25, 2013		Wed., Jan. 16
Feb. 1, 2013		Wed., Jan. 23
Feb. 8, 2013		Wed., Jan. 30
Feb. 15, 2013		Wed., Feb. 6
Feb. 22, 2013		Wed., Feb. 13
March 1, 2013		Wed., Feb. 20
March 8, 2013		Wed., Feb. 27

## NO FINAL EXAM

## Goals and Objectives

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**Biology Department:** The objectives of the Biology Department can be found online at: <http://www.spu.edu/depts/biology/assessment/index.html>. We will be specifically addressing the following set of these objectives:

1. *Science as a process.* We'll explore hypothesis formation, data collection & analysis techniques and presentation of conclusions as we read the lit.
2. *Unifying themes recognized as pervading all of biological science.* Our broad topic will probably span multiple hierarchies of biology, including genetics, developmental biology, organismal biology and ecology.
3. *Fundamental concepts associated with heredity and evolution.* Much of the recent research on sex determination has focused on the evolution of sex determination mechanisms among diverse phyla.
4. *Fundamental concepts associated with organismal biology.* This will be the primary focus of the paper discussions.
5. *Research methodologies applied in the study of biological science.* If the papers don't talk about their methods, then it's a lousy paper.

**University Objectives:** The mission statement and goals of Seattle Pacific University can be found online at: <http://www.spu.edu/info/informationaboutspu.html>.

## Assignments and Assessments

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*Reading Responses:* For each paper, you will complete a written response (1 – 2 pages) that describes your reaction to the paper. See the guidelines on the last page for more information.

*Leading Discussion:* Each pair of students will have the opportunity to select and present a paper related to sex determination. Papers must be submitted to Dr. Tenlen for approval no later than 9 days before your scheduled Discussion date (for example, if you're presenting on Jan. 25, you need to submit your selection to Dr. Tenlen by Wed., Jan. 16). For the week you are leading discussion, you will be graded on your effectiveness in guiding us through the article you have chosen. While you are working together as a team, you may receive a different grade than your partner. Don't make your partner do all the work! You do NOT need to turn in a paper on the week you lead. I should be able to tell if you read it.

*Participation:* Attendance each week is essential. It is not enough to just be present in class – each student should participate by asking questions, making comments about the paper under discussion, answering questions posed by discussion leaders, etc.

## Grading

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Category	Points Possible
Reading Responses (8 x 20 pts)	160
Leading Discussion (1 x 40 pts)	40
Participation (10 x 10 pts)	100
<b>total</b>	<b>300</b>

Scale:

Percentage	Letter	Percentage	Letter
93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	60-66	D
80-82	B-	0-59	E
77-79	C+		

## Course Policies

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*Attendance and participation:* Students are expected to attend all class sessions in order to participate in discussions. To discuss a paper, you really need to be there. If you miss one class, we can deal with that, but if you miss more than one, it will be reflected in your grade. If you come to class but don't participate, you probably won't get all 10 pts.

*Classroom conduct:* You are expected to help maintain a classroom environment that is conducive to learning by arriving on time, by minimizing distractions (texting, cellphones, laptops, food), and by respecting the rights of other students to ask questions and express their views.

*Grading policy:* Point values may be altered during the course of the class depending on available time and other course constraints.

*Coursework:* All coursework must be completed and turned in by the stated deadline. You are responsible for completing all of your own work. Written responses are due at the beginning of class. Printers do sometimes run out of ink. If that happens, be sure to email it to me before class starts, then get the hardcopy to me ASAP. Late responses will be accepted, but 10% of the possible points will be deducted for each calendar day it is late.

*Plagiarism and Academic Integrity:* Plagiarism is the representation of someone else's work as your own. Neglecting to properly cite references is the most common example of this. Plagiarism and other breaches of academic integrity (e.g. cheating or copying another student's work) will not be tolerated and will be dealt with severely. The first offense will result in a failing grade for the assignment in question. The second offense will result in a failing grade for the course and your actions will be reported to the University registrar. Please ask questions IN ADVANCE if you are not sure about what constitutes plagiarism, at this stage it is simply a learning exercise (i.e., not a breach of academic integrity) and you will be able to rectify the situation. *Once a paper is submitted, however, you will be held to the above guidelines.* Since a significant part of your grade in this course will involve written responses, it is a critical that you fully understand this policy.

Any instance of cheating or interfering with another student's ability to learn will not be tolerated. In either case, the guidelines from the Academic Integrity section of the Undergraduate Catalog will be followed. See the SPU undergraduate catalog (<http://www.spu.edu/acad/UGCatalog/20123/GenerallInfo/policies.asp>) for more information on academic integrity.

*E-mail/Blackboard:* Course announcements and materials will be posted on Blackboard, and other information may be disseminated by email, so please check both regularly for any updates. I am happy to respond to emails.

*Inclement weather:* The University maintains an Emergency Closure Hotline (206-281-2800). In the event of inclement weather or an emergency that might close the university, please call the Hotline for the most up-to-date closure information or check the SPU website. Both will be updated before 6:00 a.m. In the event that class is cancelled unexpectedly, please check the course Blackboard site for make-up information.

*Emergencies:* If there is an emergency, please exit the classroom in a calm and orderly fashion and meet as a group in Otto Miller Hall's parking lot. Please do not leave this area since I need to account for all students immediately following the evacuation. If possible, pair up with your nearest neighbor in an emergency and keep track of each other until the situation has been resolved. In the unlikely event of a lockdown, please stay in the classroom and follow my directions.

*Disabilities statement:* In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, students with specific disabilities that qualify for academic accommodations should contact Disabled Student Services (DSS) in the Center for Learning (<http://www.spu.edu/depts/cfl/dss/index.asp>). DSS in turn will send a Disability Verification Letter to the course instructor indicating what accommodations have been approved.

## **Reading Responses**

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### Guidelines:

- Should be typed, no more than 2 pages, using formal writing style (including correct spelling and grammar).
- Do not simply summarize the paper – that is what the abstract is for.
- Your response needs to be detailed enough that I can tell you have read it and thought about it.
- All responses should include an analysis of what you liked about the paper, what you did not like (and why), and at least three questions you have about the paper itself, or about issues raised by the paper.
- Possible items/topics to consider including in your response:
  - What question do the authors attempt to answer in their paper, and why? How successful were they in answering the question? What do we now know about sex determination as a result of this paper?
  - What type of experiments did the authors perform, and what did they learn from these experiments? Were the experiments appropriate or sufficient? Should they have done additional experiments?
  - What types of claims do the authors make about their findings (such as in the title or abstract, or in the discussion)? Are these claims supported by their findings?
  - What questions are left unanswered, or what new questions are created by their research?

## **Leading Discussions**

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### Guidelines:

- Each pair of students should meet together to discuss the paper, and plan how they will lead the discussion.
- You are encouraged to meet with Dr. Tenlen prior to your scheduled session if you have questions about the paper, need help understanding the background material, or want to go over your presentation.
- Your talk should include the following (other items may be added as needed, keeping in mind that class is 50 min.):
  - Brief background info – what is the “Big Picture” question that the authors are interested in? What was already known? What specific question(s) does the paper focus on, and why?
  - What is the general methodology/approach to answer the question? Is this approach effective?
  - For each figure or table: what is the question being addressed? What specific methods/techniques were used, and how was the data collected? What were the results?
  - What would you conclude from these results? How do the results address the question(s) that motivated the paper? What contributions does this paper make to the field as a whole?
- As part of your presentation, prepare at least 3 discussion questions to ask your classmates.