

Regenerative Medicine
Biol 490 Senior Seminar, Section 7
Fall 2017

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Office Hours: Thursdays 9am-10am and 1-2pm, and by appointment

Additional Course Information: further information will be provided via the Desire2Learn site

Class Meetings: Thursday 2-3:50pm in TNR 460

Course Description:

This senior seminar course will cover topics related to regenerative medicine including stem cell technology and its growing application in translational research and personalized medicine, gene therapy, and organ transplantation. Due to the nature of this course as a communication in the major and capstone for senior students, the class will be largely student-driven with journal articles, student presentations, and writing assignments.

Course Learning Objectives:

1. Apply prior scientific knowledge to understand regenerative medicine concepts.
2. Strengthen critical thinking skills through analysis of scientific literature.
3. Evaluate potential ethical concerns surrounding advances in regenerative medicine.
4. Develop written and oral communication skills for a variety of audiences.

Course Learning Outcomes:

As a result of this senior capstone course, students will be able to:

1. Apply discipline-specific standards of oral and written communication to compose an articulate, organized, and grammatically correct presentation/piece of writing with properly documented and supported ideas, evidence, and information suitable to the topic, purpose, and audience.
2. Critique their own and others' writing/oral presentations to provide effective and useful feedback to improve their communication.
3. Complete a project that integrates knowledge, skills, and experiences related to the course learning objectives.
4. Demonstrate skills, processes, and resources needed to make a successful transition from college to the world beyond.

Readings (articles and books):

Journal articles are the core reading material for this course. These articles will be provided to students via D2L.

Grading Scale (out of 100% total):

A ≥ 93-100	C = 73-76
A- = 90-92	C- = 70-72
B+ = 87-89	D+ = 67-69
B = 83-86	D = 60-66
B- = 80-82	F < 60
C+ = 77-79	

Major Class Components: *The bulk of class time and effort will be broken down into four main areas:*

- Journal articles and discussion
- Academic review paper
- Cover letter or personal statement
- Oral presentation

Journal Article Discussions:

There will be five journal article discussions throughout this course covering topics related to regenerative medicine. One of the discussions will be led by the instructor, while the other four will be led by the students. In groups of three, students will lead the class through a discussion on an assigned journal article. Attendance and participation is expected for all class sessions:

Article write-up (possible 20 points, 5 points per write-up): Regardless of whether you are leading the paper discussion, you are expected to read the paper and come to class prepared to discuss it. Students will submit a short write-up of the rationale for the study (why is this an important topic to study?), the authors' hypothesis (what did the authors expect to find?), and two questions for the discussion leaders.

Leading a discussion (possible 10 points): Discussion leaders should have an in-depth understanding of the material in the paper, including the rationale for each experiment (what techniques were used, why these techniques were chosen, how does each figure in the paper relate to the hypothesis, etc.) and will submit a one-page analysis of the paper (stating whether the hypothesis was supported or refuted by the data, and if the conclusions of the paper were appropriate given the data presented).

Academic Review Paper:

Each student will write a review paper to practice scientific writing. The paper topic is up to the student, but will need to be approved by the instructor by the second week of class. The paper must be 2000-2500 words in length (about 8-10 pages, double-spaced), excluding the references page. Students must use a *minimum* of five primary research articles and one academic review as references, properly cited throughout the paper and listed in a references section at the end of the paper. This assignment is meant to be targeted at a **scientific audience**, meaning that correct scientific terms and nomenclature should be used throughout the paper. A rubric of how the final paper will be evaluated will be distributed separately.

Paper topic choice (possible 5 points): Students should submit a paper topic idea by September 21st, including a short paragraph (3-4 sentences) of how the topic relates to the topic of regenerative medicine and supported by at least three primary article abstracts.

Review paper outline (possible 10 points): Students will need to submit an outline of their paper October 26th. The outline should have a clearly stated central topic that provides the basis for the rest of the review and a structure of the sub-topics that relate to the central idea.

Review paper first draft (possible 10 points): Students will be required to submit a first draft of their academic review paper by November 16th. The class will trade papers and peer review the work of a fellow classmate in class on 11/16. Due to this class activity, late first drafts will not be accepted.

Review paper peer review (possible 10 points): This is an in-class assignment in which students will review the first draft of a fellow colleague's review paper. The student will fill out a rubric and provide *thoughtful, critical* feedback.

Final academic review paper (possible 40 points): The final academic review paper will be due to the instructor by December 14th. The final paper should thoroughly cover major information and issues surrounding the main topic.

Cover Letter or Personal Statement (possible 10 points):

Students will write either a 1-page cover letter or personal statement. Applications for jobs or professional/graduate school often require a cover letter (job) or personal statement (school) as part of the application. These documents form a foundation for your job/school application and are screened carefully. This assignment is meant to give you an opportunity to practice writing such materials and receive feedback before you submit applications for jobs or future schooling.

Presentation of Discussion Topic:

Students will prepare a 30-minute presentation on a selected topic sometime in the second half of the course. This assignment is meant to be targeted at a **lay audience**, meaning that scientific terms should be clearly defined and content should be appropriate for those without a scientific background. The presentation will be followed by a discussion or debate among the whole class, led by the presenters. Students are expected to participate in this discussion and respectfully debate pertinent ethical or logistical issues surrounding the topic. A rubric detailing how the presentation will be evaluated will be distributed separately.

Presentation (possible 40 points): Each student will give one presentation during the semester, then lead a class discussion or debate after the talk.

Presentation feed-back (possible 25 points, 5 points per day of presentations): Students who are not the main presenter will fill out a feedback sheet for the presenter describing strengths and weaknesses of the presentation.

In-class reflections:

Periodically students will be asked to reflect on their performance of certain assignments. This is a useful tool for students to assess their own experience and work so they can improve in the future.

Point Breakdown: (see above for a brief description of each assignment)

Journal discussion leadership	10 points
Article write-up	20 points (5 points per article)
In-class reflections	15 points (5 points per reflection)
Cover letter/Personal Statement	10 points
Cover letter/statement feedback	5 points
Review paper topic choice	5 points
Review paper outline	10 points
Review paper first draft	10 points
Review paper peer review	10 points
Final review paper	40 points
Presentation	40 points
<u>Presentation discussion and feedback</u>	<u>25 points (5 points per discussion)</u>
TOTAL	200 points

Professionalism:

Attendance: Due to the discussion-based nature of this course, class attendance is required, and students are expected to arrive on time, having read any required readings. If you are not here, you cannot participate in the discussions. 5 points will be deducted from your final grade for each unexcused absence. Presentations must be done and papers must be turned in on the assigned dates for full credit. If you have an unexcused absence, you will NOT be allowed to make up missed work. Students should contact the instructor in advance if there is an extenuating circumstance that will prevent them from attending class on a given day. Absences due to holy days, athletic competitions, etc. must be disclosed to the instructor at least 3 weeks in advance.

Participation: Students are expected to arrive on time, prepared, and ready to actively participate in the classroom experience. Tardiness, disruptive behavior, or general lack of attention may count as an unexcused absence for that day.

Classroom Behavior: I expect nothing short of complete mutual respect and courtesy. It is disruptive to your instructor and fellow students to arrive late, read extra-curricular media, or use cell phones and other electronic devices while class is in session. Surfing the web or on social media during class will count as an unexcused absence for that class period. Additionally, this class is intended to be a safe space for debate over ethics, efficacy of new discoveries, etc. All students are expected to be respectful of others during these conversations. Rude or inappropriate comments will not be tolerated.

Academic Integrity:

Academic dishonesty in any form will result in disciplinary action in accordance with UW System Administrative Code. See <http://www.uwsp.edu/centers/rights/RRBOOKLET8-2005-06.pdf> for more information.

Assessment Requirements:

Satisfactory completion of this course requires the completion of the Biology Department's comprehensive exam. This exam not only provides valuable information to the instructor, the department and the university, but will provide you with the satisfaction of knowing how much you learned while attending UW-Stevens Point. Although your performance on this exam does not influence your grade in BIO 490, your grade will be withheld until the exam is complete. The exam will be offered at the following times:

Wednesday, December 6 at 6-7pm TNR 120

Thursday, December 7 at 6-7pm TNR 120

Please register for an exam time with your instructor. If you cannot attend either of these examination times, contact Dr. Dan Graf (dgraf@uwsp.edu) to schedule an alternative time.

Americans with Disabilities Act

In compliance with the Americans with Disabilities Act, I will make every effort to honor requests for reasonable accommodations made by individuals with disabilities. If you have a disability and require accommodations, please register with the Disability and Assistive Technology Center (6th floor Learning Resource Center in the Library) and let me know as soon as possible. Requests for accommodation can be responded to most effectively if I receive the requests early in the semester. Such requests are confidential.

Community Rights and Responsibilities

UWSP Community Bill of Rights and Responsibilities: UWSP values a safe, honest, respectful and inviting learning environment. A set of expectations for students and instructors, known as the Rights and Responsibilities document, is intended to help establish a positive living and learning environment. For more information go to <http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilities.aspx>.

The Rights and Responsibilities document also includes the policies regarding academic misconduct, which can be found at <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/ADA/rightsADAPolicyinfo.pdf>.

Tentative Course Schedule:

Date	Class Session	Homework due
Sept. 7	Course overview How to read a journal article	
Sept. 14	Discussion of review paper and iPSC paper	Article write-up
Sept. 21	Student paper discussion 1 How to write a cover letter or personal statement	Article write-up, choose paper topic
Sept. 28	Student paper discussion 2	Article write-up
Oct. 5	Peer evaluation and reflection of cover letter/personal statement	Cover letter/personal statement due
Oct. 12	Student paper discussion 3 How to give an effective presentation	Article write-up
Oct. 19	Student paper discussion 4 How to write a review paper	Article write-up
Oct. 26	Discussion topic 1-2 presentations	Review paper outline due
Nov. 2	Discussion topic 3-4 presentations	
Nov. 9	Discussion topic 5-6 presentations	
Nov. 16	Peer evaluation and reflection of review paper first drafts	Review paper first draft due
Nov. 23	NO CLASS - THANKSGIVING BREAK!	
Nov. 30	Discussion topic 7-8 presentations	
Dec. 7	Discussion topic 9-10 presentations	
Dec. 14	Discussion topic 11-12 presentations Course wrap-up and assessment	Review paper final draft due