

**Research Syllabus  
Carmicle Lab  
Fall 2013  
2014**

**Course Name(s)-crn-Number (s); hours:**

ST:Adv Molecular Bio Rsrch - 13871 - BIO 442 – D; 1 credit hour  
 ST:Immunobiology Rsrch I - 13885 - BIO 445 – H; 3 credit hours  
 ISR:Adv Molecular Bio Rsrch - 13870 - BIO 6461 - X ; 2 credit hours  
 ISR:Immunobiology Rsrch I - 13886 - BIO 6462 – W; 3 credit hours

**Course Location:** Medical Sciences Building 219

**Course Times:** varies with lab meetings on Mondays at noon

**Instructor:** Stephanie Carmicle, Ph. D.  
 Assistant Professor, Department of Biology  
 Medical Sciences Building, Rm 215  
 (601)-925-3872  
[carmicle@mc.edu](mailto:carmicle@mc.edu)  
[www.mc.edu/faculty/scarmicle](http://www.mc.edu/faculty/scarmicle)

**Dr. Carmicle’s Office Hours:**

<i>Dr. Carmicle's Schedule Fall 2014</i>					
	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>
8:00 AM					
9:00 AM		Office Hours		Office Hours	
10:00 AM		Gross Anatomy Lecture	Office Hours	Gross Anatomy Lecture	Office Hours
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM		Cell Biology and Genetics Lab	Gross Anatomy LAB	Gross Anatomy LAB	Gross Anatomy LAB
3:00 PM	Cell Biology and Genetics Lab				
4:00 PM					

**Prerequisites:** Bio 111 and 112

This course is a special topics course designed to introduce you to real scientific research. Before a scientist begins to do work at the bench, a thorough literature review must be completed. It makes sense that before you can design experiments to “fill in the gaps” of your knowledge, you must first know what is known and then determine where the “gaps” lie. To that end, this course consists of a literature review and bench work.

*A little about research...*

If done properly, research is a rewarding addition to classroom learning. It is exciting to be the first person to discover something new. It is thrilling to use the knowledge you've spent years gathering in a practical, hands-on manner. However, research can be frustrating. Experiments fail. Results aren't always what you expect. You make mistakes (I make mistakes ☺). That is OKAY! Do not plan on getting everything right the first time. It won't happen. I expect you to keep trying. Troubleshoot what is going wrong in the experiments. Talk to your peers and me about strategies that might work better. **Learn from your mistakes.**

**Learning Objectives:**

Upon the completion of this course you will be able to:

- Dissect a peer-reviewed scientific paper
- Learn scientific techniques that vary depending on the project
- Trouble shoot experiments
- Critically evaluate data
- Present research orally

**I expect you to:**

- ✓ Come to lab ready to learn, ask questions and think about the answers.
- ✓ Take initiative (It is the difference between an "A" and a "B".)
- ✓ Make a mistake—that is how we learn.
- ✓ Develop your own questions and search for your own answers.
- ✓ Be focused and attentive in the lab.
- ✓ Follow the lab safety rules.
- ✓ Attend lab "meeting" every week with your instructor
- ✓ Keep a notebook.
- ✓ Repeat experiments.
- ✓ Leave the lab cleaner than you found it.
- ✓ Complete a lab report/poster/oral presentation on what you accomplished.

**\*\*FAILURE to meet these expectations will significantly impact your grade in this course. \*\***

**Grading:**

<i>Item Graded</i>	<i>Percentage</i>
<b>Performance</b> (based on the rubric below)	80%
<b>Attendance</b>	10%
<b>Lab report/poster</b>	10%

**PERFORMANCE:**

This includes designing, performing, troubleshooting and interpreting experiments. This will also require reading the literature, keeping a lab notebook and completing a lab report/poster on that work. Each credit hour of lab work corresponds to approximately 42 hours of student effort. Therefore, for a 3 credit course, 130 hours spread throughout the semester. This is a minimum.

The following grading rubric will be used to assess your performance for MIDTERM and FINAL grading for the course.

## Rubric

	Stellar-5	Well done-4	Moderate-3	Unsatisfactory-0
<b>Background Research</b>	The background is thorough. Can identify credible sources of information. Does not wait for professor to find relevant papers. Begins to search for the answers to their own questions.	Can identify credible sources of information but sometimes relies on professor to identify relevant literature. Some attempts to answer their own questions.	Cannot identify credible sources of information. Usually relies on professor to identify relevant literature <b>or</b> does not attempt to answer their own questions	Cannot identify credible sources of information. Always relies on professor to identify relevant literature and does not attempt to answer their own questions
<b>Techniques /protocols</b>	Technically proficient in benchwork. Can perform the assay independently. Follows lab safety rules. Is attentive and engaged and professional in the lab. Can explain the procedure correctly and succinctly to others.	Technically proficient. Can perform the assay independently. Follows lab rules. Fails to accurately explain the procedure to others.	Has trouble completing experiments, has trouble performing the assay independently <b>or</b> continuously makes the same mistake over and over. Cannot explain the experiment/technique to others.	Does not complete experiments, cannot work independently, continuously makes the same mistake over and over. Cannot explain the experiment/technique to others.
<b>Critical thinking</b>	Can trouble shoot their experiments independently. Begins to ask thoughtful questions about project. Thinks of new experiments that are logical to try. Synthesizes information from literature and formulates questions/hypothesis, explanations.	<b>With guidance</b> , can trouble shoot their experiments independently. <b>With prompting</b> , asks thoughtful questions about project or synthesizes information from literature and formulates questions/hypothesis, explanations.	<b>Even with guidance</b> , cannot trouble shoot their experiments <b>or has trouble</b> asking thoughtful questions about project or synthesizing information from literature and formulates questions/hypothesis, explanations.	Does not even attempt to understand or question or put information together.
<b>Notebook and lab math</b>	Has an accurate, well kept, thorough notebook. Performs basic lab calculations with ease and uses the correct units.	A well kept lab notebook but needs assistance with basic lab math.	Lab notebook missing a few items. Math remains a challenge.	lab notebook incomplete, and cannot perform basic calculations.
<b>Lab meeting</b>	Was prepared, organized and rehearsed. Provided the appropriate graphs/images to support the presentations. Stated the hypothesis, summarized the procedure, analysis and conclusions with ease. Attempted to provide insight in other peoples lab meetings and added to the lab discussions.	Was prepared, organized and rehearsed. Provided the appropriate graphs/images to support the presentations. <b>With assistance</b> , stated the hypothesis, summarized the procedure, analysis and conclusions with ease or minimally participated in lab meetings.	Was not completely prepared, organized and rehearsed or the appropriate graphs/images to support the presentations were not used. Had trouble stating the hypothesis, summarizing the procedure, analyzing data or did not participate in lab meetings.	

(Points earned \_\_\_\_\_ / 25 possible points) \*100% = \_\_\_\_\_

**Grading Scale:** 90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, and <60% = F.

### LAB REPORT/POSTER:

You are expected to complete a lab report or poster to help synthesize the background information and to inform your interpretation of the data that you obtain. This assignment is **DUE Monday December 1, 2014 by 5 PM**. Details will follow. It must contain peer-reviewed, academic articles from the National Library of Medicine's database, PubMed or other credible databases for peer-reviewed scientific literature.

A penalty of 10% a day will be assessed for assignments that are turned in after the due date. Be careful not to plagiarize. **A grade of an F may be given for plagiarism**. A complete bibliography must be included at the end of your paper/poster in **CBE** format (<http://tim.thorpeallen.net/Courses/Reference/Citations.html>). You may turn it in early but again a significant penalty will be assessed for late papers.

**Lab supplies:**

Due to the nature of our research, a lab coat should be worn when doing research in the lab. This can be purchased online or at a variety of retail outlets. You will also need a fine tip lab pen (e.g. sharpie) and an electronic lab notebook. Information will follow at our first meeting as it is possible to share this expense with your lab partner.

Since our research labs are BSL-2, **we are responsible** for requiring the use of the appropriate personal protective equipment. These items include the use of closed-toe shoes, disposable gloves and lab coats. Lab coats must be mid-thigh length (not short coats). They may be purchased in Jackson at TCs or UMC or ordered online (if you order it online, please note that you may not begin work until you have a lab coat—you may borrow one from a friend if necessary).

**TC's Uniforms, Inc.** <http://www.tcsums.com/>

2715 North State Street

Jackson, MS 39216

(601)981-9274

(800)981-9274

(601)982-9024 fax

sales@tcsums.com

Hours: Monday - Friday 8:00am - 5:30pm

Saturday 9:00am - 5:00pm

**UMC Bookstore (on UMC's Campus)** <http://umcbookstore.com/>

Amazon has some for as low as \$10 <http://www.amazon.com>

Just labcoats <http://www.justlabcoats.com>

**Important dates from the academic calendar:**

September 1 – Labor Day; classes do not meet

September 2 – last day to add a full semester class

September 4 – Last Day to drop a full semester class with 100% refund

October 6-7 – Fall Break No Day or night classes

October 31 – last Day to drop a full semester class (0% refund)

November 25-30 --Thanksgiving holiday begins at 5:00 PM Tuesday; Day classes on Tuesday WILL meet

**Writing Center:**

The Mississippi College Writing Center, supervised by Dr. Steve Price, offers writing consultations free-of-charge to MC students. The Center is staffed by highly-qualified undergraduate tutors who conduct interactive, one-on-one sessions with students of all disciplines. The goal is to help writers at any stage of their writing process, from choosing topics to organizing their thoughts, from deep revision to grammar.

To schedule an appointment, drop by the LRC area on the first floor of the Leland Speed Library; call 601.925.7289; or email [WritingCenter@mc.edu](mailto:WritingCenter@mc.edu). Walk in visits are also available.

**Academic honesty:**

You are members of an institution that is dedicated to scholarship and spiritual growth. This institution is part of the larger academic community, the foundation of which is based on personal honesty. The success of this community depends on the commitment of both students and faculty to this principle and therefore cheating and plagiarism cannot and will not be tolerated. More importantly, Mississippi College is dedicated to empowering its students to develop the skills necessary for “making responsible, moral choices,” and therefore, the University will accept nothing less than scrupulous honesty from its students. We will follow the University policy on Academic Honesty (Policy 2.19), which can be found in the student handbook, The Tomahawk, pp. 35-36.

<http://www.mc.edu/publications/handbook/academic.pdf>

**Early Alert System:** Mississippi College has adopted the practice of finding students early in the semester who may be exhibiting behaviors that could ultimately have a negative impact on their academic progress. These behaviors are often called “red flag” behaviors and include, but are not limited to, excessive absences, poor test grades, and lack of class participation or evidence of non-engagement. Identifying these behaviors early gives the instructor the opportunity to raise the “red flag” on behalf of a particular student so that the student can take the appropriate action to redirect his/her progress. The system alerts the student, the student’s advisor, and the Office of Student Success.

These messages are intended to help a student recognize an area of concern and to encourage him/her to make some choices to improve the situation. When a student receives an Early Alert message, the student should quickly make an appointment to talk with his/her professor about the situation. Also, students can make full use of the Office of Student Success to set academic goals and connect to campus resources.

**Special accommodations at Student Counseling Services:**

In order for a student to receive disability accommodations under Section 504 of the Americans with Disabilities Act, he or she must schedule an individual meeting with the Director of Student Counseling Services immediately upon recognition of their disability (if their disability is known they must come in before the semester begins or make an appointment immediately upon receipt of their syllabi for the new semester). The student must bring with them written documentation from a medical physician and/or licensed clinician that verifies their disability. If the student has received prior accommodations, they must bring written documentation of those accommodations (example Individualized Education Plan from the school system).

Documentation must be current (within 3 years). The student must meet with SCS face-to face and also attend two (2) additional follow up meetings (one mid semester before or after midterm examinations and the last one at the end of the semester). Please note that the student may also schedule additional meetings as needed for support through SCS as they work with their professor throughout the semester. Note: Students must come in each semester to complete their Individualized Accommodation Plan (example: MC student completes fall semester IAP plan and even if student is a continuing student for the spring semester they must come in again to complete their spring semester IAP plan).

Student Counseling Services is located in Alumni Hall Room #4 or they may be contacted via email at: [mbryant@mc.edu](mailto:mbryant@mc.edu) or [rward@mc.edu](mailto:rward@mc.edu) or by phone at [601-925-7791](tel:601-925-7791).

A copy of the following statement must be signed and returned to Dr. Carmicle on the first day of class:

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I \_\_\_\_\_ have read and had explained all of the information and policies outlined in this syllabus for Research. I understand that as a student, that by signing this acknowledgement, I am required to adhere to the policies outlined in this syllabus during the period of my enrollment in this course. If at anytime I feel that I have not been treated in accordance with these policies, I have the right as a student to meet with the instructor, the department chair, the division and as appropriate with the college administration (to include the Vice President of Academic/Student Affairs or other administrative officials) to rectify this problem. I have discussed this course with Dr. Carmicle and will be completing the following:

*I understand that a lack of reasonable progress in the lab and a literature review that is too short will negatively affect my grade and I will not be allowed to return to the research lab.*

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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