BioC 3960 – Research Topics in Biochemistry
Fall Semester, 2014
3:35 - 4:25 P.M., Mondays, MCB 2-122

Course Director:

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Office hours after class or by appointment.

Contact each instructor directly for any issue related to his/her section of the course. Contact information is on the course Moodle site.

Course Overview & Goals

The goal of “Research Topics in Biochemistry” is to help you learn how to critically evaluate a wide variety of cutting-edge research projects. The course will begin with lectures on how to read scientific papers and the basic concepts of experimental design and analysis. Faculty from the BMBB Department will then give a series of presentations on cutting edge research. Each faculty member will conduct two sessions. The first will be a broad overview of a research area and the second will focus on a specific paper, dissecting all or part of it in detail.

Feel free to ask questions during the first talk for each speaker. Speakers like to be asked questions because it shows that the audience is interested. So please show our speakers that we appreciate the time that they’re giving to us by asking lots of questions.

Your participation is required in the second session for each instructor. Be sure to read the assigned paper, complete the typed worksheet (see below) and come to class prepared for discussion.

You will be randomly divided into groups for the second session by a lottery. Three individuals in each group will volunteer (or be elected by the group) to take on specific roles:

- **Gate Keeper** – ensures that everyone participates and no one dominates
- **Summarizer** – Summarizes the consensus periodically (typically after each question). Reports consensus to the class.
- **Critic** – (critiques ideas, not people). Challenges the consensus.
When the class reconvenes, be ready to present your consensus answers to any question in the worksheet. The instructor will call on random groups to present their answer to each question and may call on other groups to expand upon the answer.

**Assignments**

Each presenter will assign a research paper, which will be available for download from the course web site (see below). You’re required to **study** (not just read) this paper before their second presentation. You should read the paper at least twice (and key parts more than that). **Make sure that you understand it thoroughly.**

Each presenter will also create a worksheet with a number of questions that you will answer **IN YOUR OWN WORDS** after studying the assigned paper. **Type** your answers into the worksheet and bring a printed copy of the worksheet with you to class. **If you have multiple pages, they MUST be attached using a metal staple (e.g. not folded corners).** You MUST edit your worksheet during the discussion if your answers were wrong or incomplete. **Turn your worksheet in to the instructor (not the course director) at the end of the period.**

**If you don’t turn in a printed copy of your worksheet at the end of the discussion period, you’ll get an N for that assignment.** If you have a printer malfunction, use a colleague’s printer or a service such as Kinko’s on Washington Ave. or Printing Services near the Starbucks in Coffman Memorial Union. **The only exception to this policy is if you are unable to attend class,** in which case you may E mail your worksheet to the instructor **before** the second session.

The instructors will grade your worksheets as “Satisfactory” or “Not Satisfactory” based on the EFFORT that you put into them before and during class (not on whether the answers are right or wrong). **Take these worksheets seriously.** They’ll help you prepare for the second session and will figure prominently in your grade (see below). Worksheets that are turned in late (or not at all) will receive automatic grades of “Not Satisfactory”.

**Take all of the worksheets seriously and turn them all in.** Two “Not Satisfactory” worksheets will result in an N in the course (see below). If you skip a worksheet, you’ll have lost your flexibility and if a single instructor grades another worksheet as “Not Satisfactory”, you’ll get an N in the course.

Questions about worksheet grading must be **E mailed** to the instructor, not to the course director. If you send a question to the instructor by E mail, Cc the course director.

**How much can you work together?**

You are encouraged to discuss the papers with your classmates. However you are **NOT** allowed to share marked or highlighted copies of the assigned papers, or to discuss or share your answers to the worksheet questions.
**Plagiarism**

As noted above, the worksheets must be completed IN YOUR OWN WORDS. **Do not copy anything from the papers.** Simply paraphrasing or making other edits to the words of others is also unacceptable. The work must be your own, although you may include commonly used names and phrases.

One of the reasons that students have copied or paraphrased from the assigned papers in the past was the fear of getting the answers wrong. That should not be a concern in this class. The worksheets are being graded for EFFORT, not on whether they’re right or wrong. If you make a serious effort before and during class and use your own words, you’ll be fine.

**Attendance**

Attendance is NOT optional.

Sign yourself in on the attendance sheet ONLY if you are present for all, or nearly all, of the class. **Checking yourself in when you miss a substantial portion of the class constitutes academic misconduct, as does checking off someone who is not attending that class.** These violations are grounds for a grade of “N” and possibly other disciplinary actions.

I don’t keep track of excused versus unexcused absences because you’re allowed to miss three classes without consequences. You would be well advised to hold the free misses in reserve in case you get sick or have some other compelling reason for missing class.

**Grading**

This course is graded S/N. In order to get a grade of S, you must:

- Miss no more than three (3) classes (see “Attendance”) AND
- Turn in at least five (5) acceptable worksheets (see “Assignments”). Note that there are only six (6) assignments.

**Instructor Evaluations**

Instructor evaluations are a normal part of every course taught at the University of Minnesota. However, the usual practice of having the course evaluations done at the end of the semester doesn’t work well in this course, since students will have only vague recollections of the early speakers. To address this problem, you’ll be evaluating faculty as we go along.

To keep the workload reasonable, each student will evaluate a total of two sessions for the entire semester; one lecture and one discussion section for different instructors. Evaluation sheets with your name, author number and evaluation assignment will be distributed in
class. You can also find your assignments on Moodle. Turn them in to Dr. LaPorte at the end of the session. Your names and author numbers will be cut off the forms before the evaluations are given to the instructor and the instructor will not receive them until after they’ve submitted their grades. If you lose the pre-printed form, blanks will be available in class.

Completing the evaluations is a required part of each session. If you don’t submit an assigned evaluation, you won’t be given credit for attending that session. You will, however, be given credit for a worksheet, if you turned one in.

E mail

This class uses your University E mail address. You are responsible for anything that’s sent to that address!

Class Web Site

The class Moodle site will be used to download assigned papers (as PDFs) and worksheets (in Word format). Some instructors may also post supplementary materials.

Your grades and review assignments will also be available on Moodle.
### Schedule

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<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Sept 8 &amp; 15</td>
<td>David LaPorte</td>
<td>Class overview, peer review, reading papers, experimental design</td>
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<tr>
<td>Sept 22 &amp; 29</td>
<td>Michel Sanders</td>
<td>Transcriptional Regulation by Nuclear Receptors</td>
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<tr>
<td>Oct 6 &amp; 13</td>
<td>Sharon Murphy</td>
<td>Metabolism of nicotine, tobacco carcinogens and lung cancer</td>
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<tr>
<td>Oct 20 &amp; 27</td>
<td>Hideki Aihara</td>
<td>X-ray crystallographic studies of protein-DNA complexes</td>
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<td>Nov 3 &amp; 10</td>
<td>Tim Griffin</td>
<td>Using mass spectrometry-based proteomics to understand the biochemistry of cancer</td>
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<td>Nov 17 &amp; 24</td>
<td>Jim Ervasti</td>
<td>The biochemistry of Duchenne muscular dystrophy.</td>
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<td>Dec 1 &amp; 8</td>
<td>Gianluigi Veglia</td>
<td>Structural biology of membrane proteins by NMR spectroscopy</td>
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