

**Biomolecular Chemistry 720**  
**Paradigms and Experimental Design in Cellular Biochemistry**  
**Spring 2019**  
**University of Wisconsin-Madison**

**Course Description**

Biomolecular Chemistry 720 is a graduate level course that introduces first-year PhD students in the Integrated Program in Biochemistry to concepts relevant to experimental design and critical interpretation in major subfields of molecular and cellular biology. The course consists of five distinct six-session modules, each taught by an instructor with current research expertise in their assigned module topic. Each module follows the same format, with five interactive didactic lectures that begin with a discussion of the field's history and end on more current, focused topics relevant to the module. Each student is required to write a short, 2-page guided "grant" in which they propose one or two experiments as directed by the module instructor. Each student will also present one oral presentation of their grant in one randomly assigned module. The sixth session of each module will consist of several (3-5 student) 12-minute slide presentations, followed by 5 minutes of questions from the instructor and members of the class. The last session of each module is taught in five modules and emphasizes broad biochemistry knowledge. The goal is to introduce PhD candidates in IPIB to the kinds of critical thinking and writing required of an independent research scientist developing a research project to probe a complex, multifaceted biological problem in biology. Emphasis will be placed on reading and interpreting classic experiments described in the primary literature, and on the use of multidisciplinary approaches in cellular, molecular, and genome- and proteome-scale experiments.

The course is presented in two 75-minute class periods each week during the spring semester, and is designed in part to help prepare students for their written preliminary proposal and oral defense that will occur in the following year. The expectation is that students will work on course learning activities (reading, writing, problem sets, studying, etc) for 2-3 hours outside of the classroom for every lecture period. More time may be required in the module in which a student delivers an oral presentation (e.g. an additional 2 hours/week during that module may be required).

The reading assignments and slide presentations will be made available on the Box folder, with the URL indicated below. Each instructor has their own folder for their module-specific materials. General information about the presentation schedule, the syllabus, and updates to the course will be placed within Professor Fox's folder.

<b>Credits:</b>	3
<b>Requisites:</b>	2 <sup>nd</sup> semester first-year IPIB PhD students in good standing
<b>Instructional Mode:</b>	<i>Face-to-face</i>
<b>Course URL:</b>	<a href="https://uwmadison.box.com/s/wz7y5ki8ewwuwrhueobeu0rco773dg61">https://uwmadison.box.com/s/wz7y5ki8ewwuwrhueobeu0rco773dg61</a>
<b>Time &amp; Location</b>	Tuesdays and Thursdays from 2:30-4:00 PM, Room 2321 Biochemistry/BSB (old Ag. Journalism Bldg---northeast corner of BSB)

## Contact Information

Instructor	Email
Melissa Harrison	mharrison3@wisc.edu
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## Course Learning Outcomes

The goals for this course are for students to:

- Develop critical thinking skills required to design and interpret an experiment in molecular and/or cellular biology.
- Develop the writing skills relevant to preparing a grant proposal.
- Gain insight into how the scientific method is practically applied in molecular and cellular biology.
- Develop an ability to critically evaluate the research literature.

## GRADING

Grades will be based on written proposals, an oral presentation, and in-class participation. Your grade will depend on what percentage you earn: A=90-100%, B=80-89.9%, C=70-79.9%, D=60-69.9%, F<60%.

Assessment	Total Points
Written proposals (1 assignment per module). Worth 10 points per assignment	50
In-class participation (attendance is mandatory*; asking questions in class; help in presenting or evaluating an experiment discussed in class). Worth 10 points per module	50
Oral presentation (only one oral presentation is required per student, but a well prepared slide presentation is expected)	50
Total	150

**\*\*Attendance is mandatory and counts for 50% of the participation score. Absences must be excused in advance by the instructor. An unexcused absence within a module will automatically reduce the participation score for that module by 5 points.**

## RULES, RIGHTS & RESPONSIBILITIES

- See the Guide's to [Rules, Rights and Responsibilities](#)

## ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to [studentconduct.wiscweb.wisc.edu/academic-integrity/](http://studentconduct.wiscweb.wisc.edu/academic-integrity/).

## ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

**McBurney Disability Resource Center syllabus statement:** "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." <http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

## DIVERSITY & INCLUSION

**Institutional statement on diversity:** "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." <https://diversity.wisc.edu/>