

**BCHM 465 Syllabus
Spring 2021**

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LECTURE TIME AND PLACE

Tuesday and Thursday, 11:30-12:20, room LILY G420. All lectures will be recorded and will be available on Brightspace/Boilercast for students who miss a class or who would like to review a lecture.

COURSE OBJECTIVES

The overall objective of this course is to have students apply the basic concepts addressed in previous courses to areas of biochemical research that are under active investigation, with an emphasis on critical thinking. In addition, students will learn how to keep abreast of current research through the use of primary literature.

The specific objectives of the course are to have students develop a working familiarity with process of developing testable hypotheses, the ability to assess the strengths and weaknesses of a variety of approaches used to test hypotheses, the ability to succinctly ask pertinent questions regarding a topic of interest, and the ability to assess the robustness of a variety of sources of information. Further, students in this class will be expected to develop the ability to read primary literature, identify and understand the hypotheses being tested, understand how experiments address these hypotheses, and subsequently incorporate that information into a working model.

DEPARTMENTAL LEARNING OUTCOMES ADDRESSED BY THIS COURSE

- BCHM 465 students will understand the molecule principles of life based on the core disciplines of biology, chemistry and physics.
- BCHM 465 students will understand the scientific method.
- BCHM 465 students will acquire information literacy: the ability to locate, evaluate, and utilize information in the disciplines of biochemistry and molecular biology that is required for research, data analysis, and communication.
- BCHM 465 students will appreciate the ethical issues facing professionals in the life sciences.

- BCHM 465 students will understand the contributions of our discipline to society, including improvements to medicine, agriculture, the economy and the environment.

TEXTBOOK

The textbook(s) from BCHM 361/561 and BCHM 462/562 will serve as a general reference. Lectures will have associated reading materials that will be provided electronically or will be based on primary literature.

BRIGHTSPACE

The syllabus for the course, lecture notes, and assignments will be available via the Purdue University Brightspace site at: <https://purdue.brightspace.com>. Personal computers or cell phones should be brought to class to access material, including in-class assignments and quizzes, during class.

ASSESSMENT

Exams are cumulative.

The grading for this course will be as follows:

| | |
|---------------------|------------|
| Midterm Exam I | 200 points |
| Midterm Exam II | 200 points |
| Class participation | 200 points |
| Final | 200 points |

Class participation consists of several components, including contribution to class discussion as well as in class assignments, homework, and quizzes. There will be multiple unannounced short quizzes, which will be used to assess preparation for discussion for a given topic. There will be multiple in class assignments, the majority of which will feature collaborative efforts but with a number of individual assignments included as well. In addition, there will be one major presentation by a small group to the class, primarily regarding data from primary literature. Presentations will be evaluated based on content, organization/clarity, and delivery (each category will be equally weighted). The remainder of class participation points will come from homework and overall contribution to class discussion as assessed by the instructor/TA. In general, homework count for 40 points of 200, in class assignments count for 40 of 200, quizzes count for 40 points of 200, participation counts for 40 points of 200, and presentations count for 40 points of 200. *Points associated with various aspects of participation will be normalized to generate the final 200 point scale.*

The cutoff values for letter grades will be based on a curve. Typical values for a curve in this class are:

| | |
|----------------------|---|
| 680 points | A |
| 600 points | B |
| 520 points | C |
| 440 points | D |
| 439 points and below | F |

Missing a presentation or exam will result in a grade of 0 being recorded unless documented justification for the absence is presented. Any request to be excused from a class or exam must include official documentation (doctor's note, request from academic advisor, etc) explaining why the class/exam was or will be missed. Makeup tests will be scheduled in consultation with the instructor.

If you have any disagreements with the way your exam or essay has been graded, please consult the grading key and then take them up with the TA.

Requests for re-grades must be submitted no later than the end of the second class period after the graded test or assignment has been returned.

HOMEWORK ASSIGNMENTS

You are expected to complete all reading and/or writing assignments before class on the date indicated. An electronic copy of each writing assignment is due by midnight the day before class to Brightspace.

EXTRA CREDIT

There will be no opportunity for extra credit.

OBTAINING EXTRA HELP

The TA or Dr. Ogas will be available to answer your questions immediately after class or by appointment (arranged in class or by e-mail). Alternatively, you can submit questions by e-mail that can be answered in class or by return e-mail.

CLASS ATTENDANCE AND PARTICIPATION

Attendance Policy during COVID-19: Students should stay home and contact the Protect Purdue Health Center (496-INFO) if they feel ill, have any symptoms associated with COVID-19, or suspect they have been exposed to the virus. In the current context of COVID-19, in-person attendance will not be a factor in the final grades, but the student still needs to inform the instructor of any conflict that can be anticipated and will affect the submission of an assignment or the ability to take an exam. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts can be anticipated, such as for many University-sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency conflict, when advance notification to an instructor is not possible, the student should contact the instructor as soon as possible by email, through Brightspace, or by phone. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases of bereavement, quarantine, or isolation, the student or the student's representative should contact the Office of the Dean of Students via email or phone at 765-494-1747. Our course Brightspace includes a link on Attendance and Grief Absence policies under the University Policies menu.

ACADEMIC GUIDANCE IN THE EVENT A STUDENT IS QUARANTINED/ISOLATED

If you become quarantined or isolated at any point in time during the semester, in addition to support from the Protect Purdue Health Center, you will also have access to an Academic Case Manager who can provide you academic support during this time. Your Academic Case Manager can be reached at acmq@purdue.edu and will provide you with general guidelines/resources around communicating with your instructors, be available for academic support, and offer suggestions for how to be successful when learning remotely. Importantly, if you find yourself too sick to progress in the course, notify your academic case manager and notify me via email or Brightspace. We will make arrangements based on your particular situation. The Office of the Dean of Students (odos@purdue.edu) is also available to support you should this situation occur.

PROTECT PURDUE PLAN

The Protect Purdue Plan, which includes the Protect Purdue Pledge, is campus policy and as such all members of the Purdue community must comply with the required health and safety guidelines. Required behaviors in this class include: staying home and contacting the Protect Purdue Health Center (496-INFO) if you feel ill or know you have been exposed to the virus, wearing a mask in classrooms and campus buildings, at all times (e.g., no eating/drinking in the classroom), disinfecting desk/workspace prior to and after use, maintaining proper social distancing with peers and instructors (including when entering/exiting classrooms), refraining from moving furniture, avoiding shared use of personal items, maintaining robust hygiene (e.g., handwashing, disposal of tissues) prior to, during and after class, and following all safety directions from the instructor.

Students who are not engaging in these behaviors (e.g., wearing a mask) will be offered the opportunity to comply. If non-compliance continues, possible results include instructors asking the student to leave class and instructors dismissing the whole class. Students who do not comply with the required health behaviors are violating the University Code of Conduct and will be reported to the Dean of Students Office with sanctions ranging from educational requirements to dismissal from the university.

Any student who has substantial reason to believe that another person in a campus room (e.g., classroom) is threatening the safety of others by not complying (e.g., not wearing a mask) may leave the room without consequence. The student is encouraged to report the behavior to and discuss next steps with their instructor. Students also have the option of reporting the behavior to the Office of the Student Rights and Responsibilities. See also Purdue University Bill of Student Rights.

ACADEMIC MISCONDUCT

Academic misconduct of any kind will not be tolerated in any course offered by the Department of Biochemistry. Information on Purdue's policies with regard to academic misconduct can be found at

http://www.purdue.edu/studentregulations/student_conduct/regulations.html

Any incidence of academic misconduct will be reported to the Office of the Dean of Students. Academic misconduct may result in disciplinary sanctions including expulsion, suspension, probated suspension, disciplinary probation, and/or educational sanctions. In addition, such misconduct will result in punitive grading such as:

- receiving a lower or failing grade on the assignment, or

- assessing a lower or failing grade for the course

Punitive grading decisions will be made after consultation with the Office of the Dean of Students. Please note reported incidences of academic misconduct go on record for reference by other instructors. Further, a record of academic misconduct is likely to influence how current/future situations are handled.

To provide you with an unambiguous definition of academic misconduct, the following text has been excerpted from "Academic Integrity: A Guide for Students", written by Stephen Akers, Ph.D., Executive Associate Dean of Students (1995, Revised 1999, 2003), and published by the Office of the Dean of Students in cooperation with Purdue Student Government, Schleman Hall of Student Services, Room 207, 475 Stadium Mall Drive West Lafayette, IN 47907-2050.

"Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, *Student Regulations*] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]

More specifically, the following are a few examples of academic dishonesty which have been discovered at Purdue University.

- substituting on an exam for another student
- substituting in a course for another student
- paying someone else to write a paper and submitting it as one's own work
- giving or receiving answers by use of signals during an exam
- copying with or without the other person's knowledge during an exam
- doing class assignments for someone else
- plagiarizing published material, class assignments, or lab reports
- turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- padding items of a bibliography
- obtaining an unauthorized copy of a test in advance of its scheduled administration
- using unauthorized notes during an exam
- collaborating with other students on assignments when it is not allowed
- obtaining a test from the exam site, completing and submitting it later
- altering answers on a scored test and submitting it for a regrade
- accessing and altering grade records
- stealing class assignments from other students and submitting them as one's own
- fabricating data
- destroying or stealing the work of other students

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one's own"

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Purdue's Honor Pledge was developed by students to advance a supportive environment that promotes academic integrity and excellence. It is intended that this pledge inspires Boilermakers of all generations to stay "on track" to themselves and their University. "As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue."

NOTICE OF COPYRIGHT PROTECTION OF COURSE MATERIALS

Among the materials that may be protected by copyright law are the lectures, notes, and other material presented in class or as part of the course. Always assume the materials presented by an instructor are protected by copyright unless the instructor has stated otherwise. Students enrolled in, and authorized visitors to, Purdue University courses are permitted to take notes, which they may use for individual/group study or for other non-commercial purposes reasonably arising from enrollment in the course or the University generally.

Notes taken in class are, however, generally considered to be "derivative works" of the instructor's presentations and materials, and they are thus subject to the instructor's copyright in such presentations and materials. No individual is permitted to sell or otherwise barter notes, either to other students or to any commercial concern, for a course without the express written permission of the course instructor. To obtain permission to sell or barter notes, the individual wishing to sell or barter the notes must be registered in the course or must be an approved visitor to the class. Course instructors may choose to grant or not grant such permission at their own discretion, and may require a review of the notes prior to their being sold or bartered. If they do grant such permission, they may revoke it at any time, if they so choose.

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the

instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

ON-LINE COURSE EVALUATIONS

During the last two weeks of the semester, you will be provided an opportunity to evaluate this course and your instructor(s). To this end, Purdue has transitioned to online course evaluations. On Monday of the fifteenth week of classes, you will receive an official email from evaluation administrators with a link to the online evaluation site. You will have two weeks to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

NON-DISCRIMINATION POLICY

Purdue University's non-discrimination policy will be upheld in this classroom. Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

Purdue University views, evaluates, and treats all persons in any University related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

In this course, each voice in the classroom has something of value to contribute. Please take care to respect the different experiences, beliefs and values expressed by students and staff involved in this course. We support Purdue's commitment to diversity, and welcome individuals of all ages, backgrounds, citizenships, disability, sex, education, ethnicities, family statuses, genders, gender identities, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences

For more information, see http://www.purdue.edu/purdue/ea_eou_statement.html.

MENTAL HEALTH

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765) 494-6995 or <http://www.purdue.edu/caps/> after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours.

ACCESSIBILITY AND ACCOMODATIONS

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are

welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

DISCLAIMER

This syllabus is subject to change.

LECTURE SCHEDULE (*this is a rough outline – may be altered significantly including addition of new topics and/or removal of listed topics based on progress/interests of class*)

| <u>Week</u> | <u>Topic</u> |
|-------------|--|
| 1 | Introduction/overview of class Analysis of science in popular press |
| 2 | Comparison of Vioxx and Zetia |
| 3 | Comparison of Vioxx and Zetia |
| 4 | Nasmyth paper on ChIP and HO |
| 5 | Exam I, review of exam |
| 6 | Nasmyth paper on ChIP and HO |
| 7 | Nasmyth paper on ChIP and HO/Stillman paper on lncRNA and HO |
| 8 | Stillman paper on lncRNA and HO |
| 9 | Stillman paper on lncRNA and HO/ Behrens paper on MBD3 |
| 10 | Exam II, review of exam |
| 11 | Behrens paper on MBD3 |
| 12 | Behrens paper on MBD3 |
| 13 | Group presentations on primary literature |
| 14 | Group presentations on primary literature |
| 15 | Group presentations on primary literature |