

## Syllabus Fall 2021 Biochemistry/BMC 701

**Credits:** 1

**Canvas Course URL:** <https://canvas.wisc.edu/>

**Course Designations and Attributes:** Graduate course

**Meeting Time and Location:** Tuesdays 3:30-4:30 and Thursdays 3:30-5:00 pm  
Room 2131 Biochemical Sciences Building

**Instructional Mode:** In-person

**Specify how Credit Hours are met by the Course:** 45 hours of student engagement with the course learning activities over 15 weeks.

### INSTRUCTORS

**Instructor Titles and Names:**

**Professors** Christina Hull ([cmhull@wisc.edu](mailto:cmhull@wisc.edu)), **Course Chair**

David Brow ([dabrow@wisc.edu](mailto:dabrow@wisc.edu))

Robert Kirchdoerfer ([rnkirchdoerf@wisc.edu](mailto:rnkirchdoerf@wisc.edu))

Robert Landick ([landick@bact.wisc.edu](mailto:landick@bact.wisc.edu))

Chad Rienstra ([crienstra@wisc.edu](mailto:crienstra@wisc.edu))

Josh Coon ([jcoon@chem.wisc.edu](mailto:jcoon@chem.wisc.edu))

Michael M. Cox ([cox@biochem.wisc.edu](mailto:cox@biochem.wisc.edu))

John Denu ([john.denu@wisc.edu](mailto:john.denu@wisc.edu))

**Instructor Availability:** office hours by appointment

**Instructor Email/Preferred Contact:** [cmhull@wisc.edu](mailto:cmhull@wisc.edu)

### OFFICIAL COURSE DESCRIPTION

#### Course Description

*As approved through governance, presented in the Guide.*

Training for the practical aspects of being a scientist and professional responsibility. Will cover research misconduct, the protection of human subjects, the welfare of laboratory animals, conflicts of interest, data management practices, mentor and mentee responsibilities, collaborative research, authorship and publication, peer review, and more.

**Enroll Info:** Admission to the IPiB or Biophysics Programs

**Requisites:** Admission to the IPiB or Biophysics Programs

Breadth – Required of all graduate students in the IPiB

Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

## LEARNING OUTCOMES

### Course Learning Outcomes:

Students will become familiar with all important topics involving professional responsibility and ethics in biomedical research.

## GRADING

Grading is based on attendance and participation in Discussion. Attendance is required, and absences must be arranged in advance with instructor. Absence at more than two sessions will lead to class failure and a requirement to re-take the course.

Limited to students in the IPiB (required) and Biophysics Programs  
1 credit = 45 hours of student engagement with the course learning activities

Meeting times: Tuesdays and Thursdays at 3:30 PM for 60-90 minutes as indicated; pre-class activities up to 60 minutes per week as requested.

### Schedule:

<u>Date</u>	<u>Topic</u>
9/9	Entering Graduate Research/Safety Considerations
9/14	NSF GRF Application Workshop by Graduate School
9/16	Skill Development in Graduate Education
9/21	Peer Review of Scientific Manuscripts
9/23	Critically Evaluating Primary Scientific Literature
9/28	Ethics - Research Misconduct
9/30	Case Studies Discussion
10/5	Authorship in STEM Fields
10/7	Publication in STEM Fields
10/12	Data Rigor and Reproducibility
10/14	Laboratory Notebooks and Data Management
10/19	Ethics - Conflicts of Interest
10/21	Case Studies Discussion
10/26	Choosing a Lab/Communicating with Mentors
10/28	NSOC Check-in meeting/Choosing a Lab
11/2	Ethics of Animal Research
11/4	Ethics of Human Subjects Research

11/9	Collaborative Research in Academia
11/11	Collaborative Research in Industry
11/16	The Importance of Diversity in Science
11/18	Culturally Aware Practices in STEM
11/23	Bias in STEM Environments
11/25	Thanksgiving Break – No Class
11/30	Developing a Career in Science
12/2	Developing a Professional Support Network
12/7	Managing Stress in Graduate School
12/9	Mental Health Resources for Graduate Students
12/14	Realizing Work-Life Satisfaction

#### Source Materials:

##### *Entering Research: Research Mentee Training to Support Undergraduate and Graduate Trainees*

These are drawn from *Entering Research* (2nd edition; Branchaw, Butz, & Smith, 2019; Macmillan). The *Entering Research* materials were developed, reviewed, and tested by many partners across the country. Activity developers are acknowledged in the footer of each page. A full listing of partners and funders can be found at CIMERProject.org and in the *Entering Research* book.

CIMER mentor/mentee training curricula ("CIMER Curricula") are based upon the curricula in the publication *Entering Mentoring* (Pfund, Branchaw, and Handelsman, 2014) and *Entering Research* (Branchaw, Butz, & Smith, 2019) and are used/adapted with permission from W.H.

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#### Other Resources:

##### *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*

Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. ISBN: 0-309-11971-5, 82 pages, (2009)

##### *Protecting Human Research Participants (NIH course and Guide)*

*Lab Dynamics: Management Skills for Scientists*

Carl M. Cohen, Suzanne L. Cohen - Science - 2008

Cold Spring Harbor Laboratory Press

*At the Helm, Leading your laboratory 2nd Edition*

Kathy Barker 2010

Cold Spring Harbor Laboratory Press

*At the Bench, A laboratory navigator updated edition*

Kathy Barker 2005

Cold Spring Harbor Laboratory Press

*Entering Mentoring*

Jo Handelsman, Christine Pfund, Sarah Miller Lauffer, Christine Maidl Pribbenow

HHMI Free Resource (2005)

*Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty:*

HHMI resource (2006)

*A Career Development Plan for Postdocs*

[http://sciencecareers.sciencemag.org/career\\_development/previous\\_issues/articles/1960/a\\_career\\_development\\_plan\\_for\\_postdocs/](http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/1960/a_career_development_plan_for_postdocs/)

*Individual Development Plan (IDP) Form: FASEB*

*IDP Evaluation Form: FASEB*