Brown-Pfizer Online Master's of Arts Program

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BROWN
Division of Biology and Medicine

Pfizer

Two Offerings

- Take courses in the biomedical sciences to fill a knowledge gap

- String courses together toward a Master of Arts in Biology

Elevate Your Science.

Empower Your Career.

“This program definitely ‘sped up’ my career trajectory - the skills I learned throughout my time at Brown greatly improved my literature skills, helping me understand more during meetings.”

“Immediately, I was able to apply learnings from my course work in my first class. It was a pleasant and proud moment to hear topics discussed during meetings that I was aware of and understood. I think this was the case for all my classes, that I could learn something new and identify it at work.”

Student Perspective

Kari Donahue
Pfizer 2022 - present
Brown / Pfizer program 2022 – 2026

My favorite aspects of the program

- Direct applicability to drug discovery and development
- Supportive communities at both Brown and Pfizer
- Networking with and meeting new colleagues – fosters collaborations between departments and groups
- Professional and personal growth

Why Brown?

- **Elevate Your Science**
- **Flexible Pacing**
- Dedicated Faculty
- Ivy League Network
- Empower Your Career

Learning Goals

- Demonstrate an **understanding of the breadth of modern biology** related to physiology, cellular and molecular biology, organismal structure and function, and diversity through the foundational core courses and electives.
- Demonstrate **expertise in targeted biology sub-disciplines** through advanced coursework, with a focus on practical applications in biological and biomedical sciences.
- **Evaluate scientific literature and experimental results** to analyze research innovations, product development, and decision-making in biomedical sciences and biotechnology.
- Effectively **communicate scientific ideas and methodologies**, translating complex biological findings into accessible and actionable applications, both orally and in writing.
- Develop **teamwork and leadership skills** through the participation in biomedical related collaborative projects.

Master's Curriculum: 8 Courses + Capstone

- Core Courses
  - Cell biology
  - Biochemistry
  - Genetics
  - Physiology
- Sample Electives
  - Molecular Drug Targets
  - Immunology
  - Cancer Biology
  - Pharmacology and Pharmacokinetics
  - Gene and RNA Therapeutics
  - Virology
  - Biomolecular Interactions
- Capstone project

Pace the Program to Fit Your Life

- **Anyone** with a bachelor's can take courses
- Take a course each semester
- Spread out your courses
- Learn a specific topic
- Once you have passed 2 courses with a B or better you can choose to join our AM Program

Why Brown?

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2025-2026 Course Instructors

Diana Horrigan, PhD

Chuck Toth, PhD

“Diana Horrigan’s approach to teaching is particularly effective because of her ability to make complex material feel approachable and relevant. She balances structured content delivery with open discussion, encouraging students to actively engage with the material rather than passively absorb it. Overall, her clarity, enthusiasm, and dedication to student learning have made the course both intellectually stimulating and personally meaningful.”

“Chuck Toth's attitude and enthusiasm for teaching was very apparent throughout this course; his demeanor alone made this course memorable. The numerous guest lecturers brought on were extremely helpful in creating connections for students, describing the application of course topics, and providing an inside look at different jobs in biomedical research. The majority of assigned projects were unique, and the final few assignments were especially memorable, making it so this course will stick in my mind going forward.”

Why Brown?

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- **Ivy League Network**
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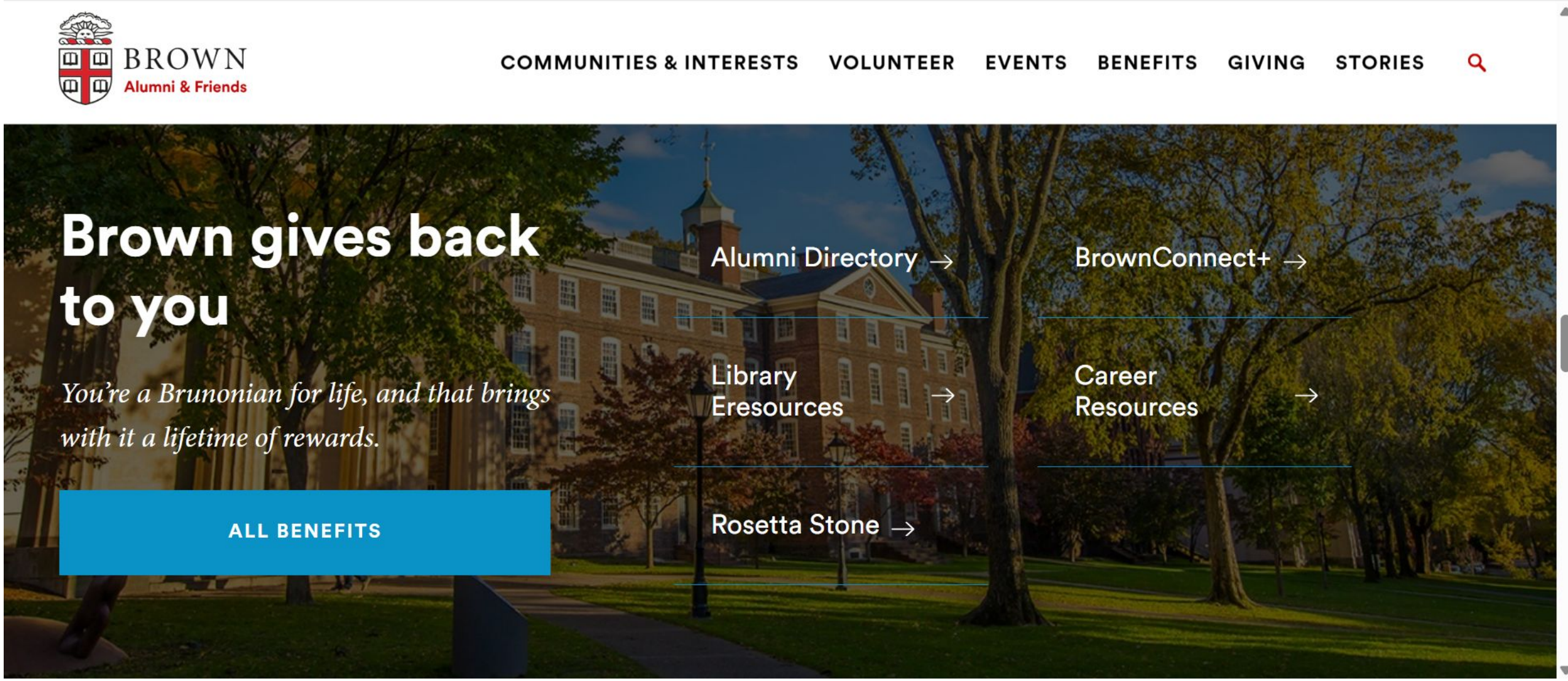
Join Our Ivy League Network



Program Outcomes

- Since 1991, 2,747 students have enrolled in the 72 courses
- Since 1995, 203 AM degrees awarded

Climate Survey

- Good for balancing full-time work with academic pursuits. (Courses were appropriately challenging)
- Engaging and accommodating professors
- The curriculum significantly contributed to their development as scientists
- Assisted them in determining the type of scientific path they wanted to pursue further
- Fostered career growth and opportunities

“Developed confidence and skills/knowledge."

“Job security and better career avenues were opened up”

“I was promoted to a new role”

Empower Your Career

“More job opportunities”

“Helped me grow in my current position.”

“Helped me get into graduate school for a PhD program.”

“Helped me with my daily responsibilities at Pfizer.”

“Since enrolling, I have received a promotion.”

Register Here For Courses

- Take advantage of Pfizer’s tuition reimbursement

- Fall 2025 Now Open
  - Molecular Targets of Drug Design
- Spring 2026
  - Biology of the Eukaryotic Cell

Pfizer Program Course Registration

- Materials to submit, *at least* one month prior to the start of the term:
  1. Registration Form
  2. Statement describing your interest in taking coursework at Brown University. Note: This *letter of intent* need only be filed once unless the student has a change in plans of which we should be informed

- Consult with your Pfizer Human Resources Department to ensure you have complied with all procedures required by your employer

- Students should consult employer policies regarding tuition reimbursement

Pfizer Program Course Registration

- **The deadline for *enrollment* in a course is the end of the week after the first class meeting**
- Earlier enrollment is encouraged
- Students are welcomed to visit the class once before making their enrollment decision
- **The deadline to drop a course is the end of the second class week**
- To drop a course, you must submit an email to Meagan Pepper-Estes (Meagan_Pepper@Brown.edu) by this deadline. The Brown University policy for refunds of paid tuition can be found on the Bursar's site

Tuition and Fees

- **Tuition Rate for 2025-2026:** Tuition (per course): $8,962
- Tuition and fees must be paid prior to the start of classes
- Payment for student account charges are accepted by mail, wire transfer, electronically, and by participation in the interest free Brown Installment Payment Plan (IPP)
- Payment by any of the mentioned methods is expected by the established deadlines to avoid the assessment of a Late Payment Charge
- **Please review the Brown Student Payment page for complete information about tuition payments**
- For information about processing payments, please contact the Cashier's office at (401) 863-1280 or Cashier@brown.edu

Questions? Contact Us!

Academics: Jacquelyn_Schell@brown.edu

Registration: Meagan_Pepper@brown.edu

BIOL 2145 Syllabus: Diana_Horrigan@brown.edu

BIOL 2050 Syllabus: Chuck_Toth@brown.edu

Pfizer Student Liaison:katharine.donahue@pfizer.com

Molecular Targets of Drug Discovery
Preview for Fall 2025

Diana Horrigan, PhD
Associate Teaching Professor, Biology, Dept. of Pathology & Laboratory Medicine
Co-Director, Therapeutic Sciences Graduate Program

Diana Horrigan

- Assumption College, BA in Biology, 2001
- Brown University, Ph.D. in Biomedical Sciences (Molecular Pharmacology & Physiology), 2006
- Began teaching at Brown in 2011
  - Associate Teaching Professor, Biology
  - Co-Director, Therapeutic Sciences PhD Program

Course Description

The overall goal of this course is to provide students with a solid understanding of the ways in which therapeutic targets are identified and selected. A variety of targets will be discussed as they relate to a particular disease condition. Students will be exposed to experts in the field

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Learning Outcomes

- Describe the methods essential for identifying a drug target.
- Analyze the advantages and disadvantages of methods and assays used in the process of drug discovery and development.
- Describe the characteristics of specific drug targets and identify key principles that are considered in the process of drug discovery.
- Apply the principles of drug discovery and development by designing a drug for a chosen target and giving an oral presentation in class.
- Discuss the practical and analytical skills required for a career in the pharmaceutical industry with experts in the field.

Tentative Schedule
Meeting Time: W 3:00-6:00pm

Week	Date	Topic	Other
Overview of Drug Discovery			
1	Sept 4th (Thursday)	Introduction/Overview of Drug Discovery	*The first class meeting is on a Thursday afternoon.
2	Sept 10th	Target Identification & Clinical Trial Design	Literature review
Ion Channels & Receptors as Targets			
3	Sept 17th	CFTR for Cystic Fibrosis	Quiz #1 Topic Discussion
4	Sept 24th	*Wayne Bowen, PhD* *Professor Emeritus of Neuroscience, Brown University* Sigma Receptors as Targets	Topic Discussion
5	Oct 1st	TBD	Quiz #2 Topic Discussion
	Oct 8th	NO CLASS	

Tentative Schedule

Genes & Nucleic Acids as Targets			
6	Oct 15th	*Kailene Simon, PhD* *Senior Director, Head of Biochemistry & Biophysics, Parabilis Medicines* RNA Therapies	Topic Discussion
7	Oct 22nd	Gene Therapy for Hemophilia	Quiz #3 Topic Discussion
8	Oct 29th	Gene Therapy for DMD	Discussion of Final Project Begin work on Project

Tentative Schedule

Novel Targets & Therapies			
9	Nov 5th	*David Livingston, PhD, MBA, CSO, Metro International Biotech, LLC* Therapeutic Targets for Aging	Topic Discussion
10	Nov 12th	Therapeutic Targets for PROTACs	Quiz #4 Group Work on Project
11	Nov 19th	mAbs for the treatment of Alzheimer's Disease	Topic Discussion
	Nov 26th	NO CLASS—Thanksgiving	Virtual office hours on 11/25 (optional; see Canvas to sign up)
12	Dec 3rd	FINAL PROJECTS	
13	Dec 10th	FINAL PROJECTS	

Course Format

Time: Once per week, approximately 3 hours

Class Period Structure (may vary slightly depending on week):

- **First 60-75 minutes:** Lecture of a particular target including its role in disease and therapies for that target/disease
- **10-15 minute break**
- **Last 60-75 minutes:** Student-led discussion of a current topic

Course Time Commitment

Class meetings: 13 meetings, 3 hours each

Time outside of class:

- Approximately 1-2 hours per week of reading in preparation for lectures and class discussions
- Weekly response to Canvas discussion board
- Study for bi-weekly in-class Quiz
- Preparation for group final presentation
  - Some time will be devoted to work on this during class
  - May require additional meetings outside of class

- I will do my best to limit the time you need to spend on work outside of class.

Course Materials & Resources

- **Student-led discussions:**
  - Each student will be assigned a class period to lead the discussion.
  - The instructor will provide students with a topic and some readings or other resources (e.g., video, podcast, etc) to get started.
  - The discussion will begin virtually on a discussion board where all students must post prior to class.
  - Student leaders will monitor the discussion board and use responses as a starting point for the in-class discussion.

Assessments & Grading

Assessment	Weight
4 Bi-weekly Quizzes	10% each (40% total)
Discussion Board/Student-led Discussions	25%
Participation/Attendance	5%
Group Presentation	30%

Group Presentation

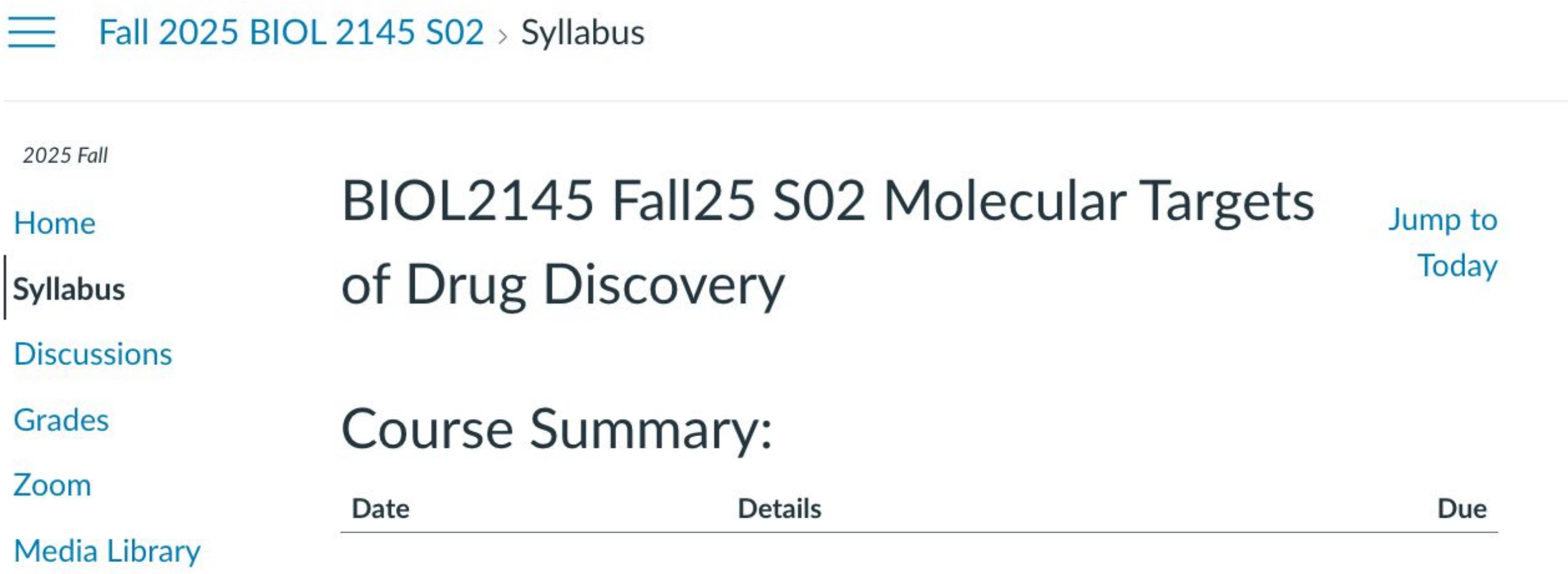
- **Overview:**
  - Choose a particular molecular target and explain how/why your group would design a therapy for that particular target.

- **Format:**
  - Groups of no more than 3 students
  - 15 minute slide deck presentation
  - Components of presentation
    - Introduction
    - Design of Therapeutic
    - Assays for efficacy, safety & toxicology
    - Broad overview of clinical trial design

Canvas.brown.edu

Canvas site will be live on or before August 15th

Check Canvas for all updates, syllabus, readings, etc.



SPRING 2026
BIOL 2050: Biology of the Eukaryotic Cell

BIOL 2050 examines subcellular processes and macromolecular complexes of eukaryotic cells with respect to structural and functional roles in major cellular activities. It emphasizes the experimental basis for knowledge in modern cell biology using original literature. Course content will cover cellular and molecular techniques in cell biology, functions of cellular compartments and organelles, and the organization and expression of genetic information in eukaryotes, comparing normal and pathological states. Application to drug development will be emphasized.

- Identify and critically evaluate key questions, concerns, and approaches of eukaryotic cell biology.
- Apply knowledge of normal cellular and molecular processes, related pathological conditions, and understanding of the drug development process to creation of a grant proposal.