

MCB 295A: Immunotherapy Colloquium
Fall 2021 Room: Life Sciences South room 440
1 unit

Instructor Information Joyce Schroeder, PhD Professor and Head Department of Molecular and Cellular Biology University of Arizona	Contact Information Email: joyces@email.arizona.edu Phone: 520-626-1384 Instructor Availability Office Hours: Wednesday 2-3pm LSS 444A
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Course Description

Students will explore the current state of the art in immuno-oncology: the therapeutic approach designed to activate a patient's own immune system against cancer. This approach has recently garnered significant excitement as previously incurable cancers are seeing remarkable remissions. The course will provide a brief overview of cancer and the immune system, with a focus on the novel treatments of checkpoint inhibitors and chimeric antigen receptor transgenic therapies. This is a second-year colloquium course and requires the students to have either completed or to be concurrently enrolled in introductory biology.

Required Course Materials

Reading: A Cure Within: Scientists Unleashing the Immune System to Kill Cancer. Neil Canavan, Cold Spring Harbor Laboratory Press, 2018.

Other materials: none

Course Objectives and Expected Learning Outcomes:

By participating in the class, students will be able to:

- Understand the basic cause, progression and treatments of cancer in relation to the immune system
- Appreciate the process of cancer development, drug development and clinical treatments
- Consider the ethical implications of novel drug development

Schedule of Topics and Activities

Date	Topic	Activity
8-25-21	What is cancer? Focus on solid tumors	In-class Discussion
9-1-21	What is cancer? Focus on liquid tumors	In-class Discussion
9-8-21	Key components of the immune system	In-class Discussion
9-15-21	The internal fight against cancer: Activation	In-class Discussion
9-22-21	The internal fight against cancer: Suppression	Chapter 1 and model
9-29-21	Chapter 1: James Allison and CTLA-4	Chapter 1 and model
10-6-21	Chapter 2: Jedd Wolchok and CTLA-4	Chapter 2 and model
10-13-21	Chapter 3: Axel Hoos and CTLA-4	Chapter 3 and model
10-20-21	Chapter 6: Susanne Topalian and PD-1	Chapter 6 and model
10-27-21	Chapter 15: Patrick Hwu and CAR-Ts	Chapter 15 and model
11-3-21	Chapter 16: Carl June and CAR-Ts	Chapter 16 and model
11-10-21	Chapter 17: Michel Sadelain and CAR-Ts	Chapter 17 and model
11-17-21	Laurence Zitvogel and the microbiome	Chapter 25 and model
11-24-21	No class, Thanksgiving break	
12-1-21	Immunotherapy summary and future directions	Discussion

Attendance and Class Participation Policies

MCB 295A is an active colloquium where students are expected to attend class ready to discuss the week's reading and participate in the related activities. As such weekly attendance and participation are required. Exceptions will be made conflicts due to University-authorized commitments (pre-approved by the

UA Dean of Students), or holidays observed by organized religion with which you are affiliated provided the instructor is contacted *before* the discussion is missed, proper documentation is provided, and a make-up assignment is completed within one week of the absence. At the instructor's discretion, some form of accommodation may be made in the event of extraordinary circumstances such as serious illness, accident, or family emergency.

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: <https://deanofstudents.arizona.edu/absences>

Required Course Activities, Assignments/Exams

In-Class Discussion and Activities (12): Students will participate in discussions and work on related problem sets. Students will turn in weekly assignments based on these activities.

- Each assignment will be graded for content and is worth 5 points. Total points: 60

Active Learning activity (12): Students will work on class materials after class, and turn-in these assignments in the following class.

- Each assignment will be given participation points worth 3 points. Total points: 36

Final Paper: One 2-page paper is due at the end of the semester, to be focused on either Checkpoint inhibitors or CAR-T cells. The paper should cover the basic science (how does it work, what is it designed to do), clinical translation (in clinical trials, how well does it work, and under what circumstances), and any toxicities observed.

- Margins, .5-1 inch, font: arial, 12, double spaced.
- Due date is shown on calendar, to be uploaded to d2l assignments (note that the essay will be run through Turn It In to verify originality).
- Total points: 104

Grading Scale and Grade Policies

There is no curving. Make-ups will only be given in cases of documented emergencies or Dean of Students-excused absences and must be requested within 48 hours of the assignment date. A maximum of 2 make-ups will be allowed.

Grades will be awarded as follows:

Grade	Cutoffs
S (superior)	180-200
P (pass)	120-179
F (fail)	< 119

Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

Late Assignments Policy: All assignments are due either during the class period they are assigned (in-class discussions) or on the date listed on d2l for the final paper.

Extra credit policy: There will be no extra credit

Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and

not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Students are asked to refrain from disruptive conversations with people sitting around them during discussion. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

Threatening Behavior Policy

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

Accessibility and Accommodations for Students with Disabilities

At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let me know so that we can discuss options. You are also encouraged to contact Disability Resources (520-621-3268) to explore reasonable accommodation.

If our class meets at a campus location: Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

Academic Integrity Policies

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog.

See: <http://deanofstudents.arizona.edu/codeofacademicintegrity> <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

The University Libraries have some excellent tips for avoiding plagiarism, available at <http://new.library.arizona.edu/research/citing/plagiarism>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

UA Nondiscrimination and Anti-Harassment Policy

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

Additional Resources for Students

UA Academic policies and procedures are available at <http://catalog.arizona.edu/policies>

Student Assistance and Advocacy information is available

at <http://deanofstudents.arizona.edu/student-assistance/students/student-assistance>

Confidentiality of Student Records

<http://www.registrar.arizona.edu/personal-information/family-educational-rights-and-privacy-act-1974-ferpa?topic=ferpa>

Subject to Change Statement

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.