

**MCB 195G: Molecular Biology and Food Colloquium**  
**Fall 2020**  
**Room: Shantz 338**  
**Fridays 1:00-1:50 (1 unit)**

<b>Instructor Information</b> Frans E. Tax, PhD Professor, Department of Molecular and Cellular Biology University of Arizona	<b>Contact Information</b> Email: fetax@email.arizona.edu Phone: 626-1186 <b>Instructor Availability</b> Office Hours: Monday 11:30-12:30 Life Sciences South 254 Or by email
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**Course Description**

Students will explore the basics of cell and molecular biology through the study of food, learn how to succeed in university-level biology courses, learn how to get involved in undergraduate research, and explore career opportunities available to people with degrees in molecular and cellular biology. Students will consider the origins of their food, and learn about where changes in the technology of food will come from in the future. This is a first-year colloquium course.

**Course Prerequisites and Co-requisites:**

None

**Required Course Materials**

**Food Rules**, short book by Michael Pollan will be available on D2L, or you can purchase at your local bookstore or through Amazon.

**Other Supplemental** materials will include podcasts, videos, short personal narratives from various sources, research articles from PubMed and will be accessible through D2L

**Course Modality;** This class is scheduled to be taught in the in-person modality. We will meet as a group Fridays from 1-2 PM.

**Office hours** will be in person or via Zoom, and if students cannot meet at the scheduled time, extra in-person or Zoom meetings can be arranged via email.

The purpose of office hours is to answer any questions about class, the MCB major, research opportunities, or to network. Students are encouraged to come in groups if they wish. Once the weather cools down, I will announce office hours to be located outside (look for announcements).

**Course Objectives and Expected Learning Outcomes:**

## MCB 195G Syllabus

In this course, students will:

- Participate in structured discussions of course readings,
- Employ evidence-based learning methods to studying topics in molecular and cellular biology,
- Practice (virtually) experimental techniques in molecular biology (DNA isolation, PCR, gel electrophoresis).
- Develop and deliver a group oral presentation a current topic in molecular and cellular biology to the class,
- Explore undergraduate research and career opportunities available to people who study molecular and cellular biology.

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

<b>Upon successful completion of the MCB195G you will be able to:</b>	<b>Which aligns with MCB program outcome:</b>
Discuss in broad terms key concepts in molecular and cellular biology including structure-function relationships, cell metabolism, and genetics.	Demonstrate understanding of the molecular and cellular mechanisms that govern life and apply that understanding to novel scenarios.
Practice basic molecular biology skills and experiments.	Apply principles of experimental design to problems.
Research a current issue in molecular and cellular biology.	Evaluate the reliability of sources of information about biology.
Give a short oral presentation on a current issue in molecular and cellular biology.	Communicate effectively about scientific ideas and methods.
Identify ethical questions that arise as new biology research emerges (for example, traditional genetics versus GMOs).	Demonstrate ability to analyze the role of biology in societal decisions and to apply ethical decision-making to evaluate existing and new scientific approaches

### Tentative Schedule of Topics and Activities

<b>Week</b>	<b>Topic</b>	<b>Reading or other Activity</b>
1-August 27	Introduction to class Expectations of MCB students To introduce yourself to the author Michael Pollan before class-watch:	Start Pollan book-Part 1 Journal entry 1: What are your favorite foods?

## MCB 195G Syllabus

	<a href="https://sfenvironment.org/zh/video/food-rules-by-michael-pollan">https://sfenvironment.org/zh/video/food-rules-by-michael-pollan</a> <a href="https://www.youtube.com/watch?v=37NHX2iZrBA">https://www.youtube.com/watch?v=37NHX2iZrBA</a>	Where do they originate from? How often do you eat them?
2-September 3	Food and its molecular biology	Journal entry 2. (Pollan book Part 2) Track your food intake for a week. Are you surprised by anything that you weren't aware of? Evaluate how you are doing based on Pollan's rules. Are there changes you want to make in your diet? Does stress and school change your diet?
3-September 10	Undergraduate Panel	Read Pollan book part 3: DNA review quiz. Journal entry 3-Are you interested in research? Are you currently in a lab? If not, what steps will you take to be involved in research?
4-September 17	Introduction to DNA	How to find a paper in PUBMED exercise.
5-September 24	The central dogma of molecular biology, DNA and plant traits	Paper 1, D2L questions

## MCB 195G Syllabus

6-October 1	DNA and animal traits	Exercise on COVID-19 PCR, antibody and antigen tests. Journal entry 4: each, tell the difference between the three major COVID-19 tests..Paper 2, D2L questions
7-October 8	Paper 2, part 2	Journal entry 5
8-October 15	Humans and diet	Paper 3, D2L questions
9 October 22	Humans and diet 2	D2L readings and videos, journal entry 6
10-October 29	Genetic modification (CRISPR)	Journal entry 7
11-November 5	The future of food-plants	Journal entry 8
12-November 12	The future of food/ growing meat in the lab.	D2L videos, journal entry 9
13-November 19	GMOs? Yes or no	Class debate
14-Thanksgiving break	Enjoy your Thanksgiving meal!	
15-December 3	Careers in Molecular Biology	Journal entry 10: what are you considering as a career? What education is required for this? What is your second choice? Look up what the starting salaries are.
Final Exam December 13, 1-3	Lunch with food!	Student presentations

### Attendance and Class Participation Policies

MCB 195G 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. If you anticipate being absent or are unexpectedly absent, please contact me as soon as possible (excused absences are permissible).

- **Classroom attendance:**
  - If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
  - Notify your instructor(s) if you will be missing a course meeting or an assignment deadline.
  - Non-attendance for any reason does **not** guarantee an automatic extension of due date or rescheduling of examinations/assessments.
    - Please communicate and coordinate any request directly with your instructor.
  - If you must miss the equivalent of more than one week of class, you should contact the Dean of Students Office [DOS-deanofstudents@email.arizona.edu](mailto:DOS-deanofstudents@email.arizona.edu) to share documentation about the challenges you are facing.
  - Voluntary, free, and convenient [COVID-19 testing](#) is available for students on Main Campus.
  - If you test positive for COVID-19 and you are participating in on-campus activities, you must report your results to Campus Health. To learn more about the process for reporting a positive test, visit the [Case Notification Protocol](#).
  - COVID-19 vaccine is available for all students at [Campus Health](#).
  - Visit the [UArizona COVID-19](#) page for regular updates.

*To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or [drc-info@email.arizona.edu](mailto:drc-info@email.arizona.edu).*

- **Academic advising:** If you have questions about your academic progress this semester, please reach out to your academic advisor (<https://advising.arizona.edu/advisors/major>). Contact the Advising Resource Center (<https://advising.arizona.edu/>) for all general advising questions and referral assistance. Call 520-626-8667 or email to [advising@arizona.edu](mailto:advising@arizona.edu)
- **Life challenges:** If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The [Dean of Students Office](#) can be reached at (520) 621-2057 or [DOS-deanofstudents@email.arizona.edu](mailto:DOS-deanofstudents@email.arizona.edu).
- **Physical and mental-health challenges:** If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520) 621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.

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**

*Reflection Journal Entries or preclass quizzes (10 total, 8 will count toward your grade):*

*Students will make weekly entries in a journal where they will reflect upon their learning that week. Template and samples will be provided on the first day of class.*

*Class Discussion (15 total, 12 will count towards your grade): Students will participate in class-wide discussion*

*Pre-Class quizzes (5 total, 4 will count toward your grade): Students will turn in weekly assignments based on in class activities*

*Final Presentation (required): On the date of the final exam, student will make small group presentations on a topic of their choice. Grading rubric will be provided to students in advance.*

**Final Exam or Project**

**Sample:** *On the date of the scheduled final exam, student will make individual or small group presentations on a topic of their choice.*

<https://www.registrar.arizona.edu/courses/final-examination-regulations-and-information>, and Final Exam Schedule, <http://www.registrar.arizona.edu/schedules/finals.htm>

**Grading Scale and Grade Policies**

**Sample:**

*Course grade will be based on:*

<i>Discussion (graded on weekly participation, best 12 out of 15)</i>	<i>25%</i>
<i>Preclass quizzes activities (best 4 out of 5)</i>	<i>25%</i>
<i>Reflection Journal (weekly check, best 8 out of 10)</i>	<i>30%</i>
<i>Final Presentation (rubric will be provided)</i>	<i>20%</i>

Grades will be awarded as follows:

<i>Grade</i>	
<i>S</i>	<i>85% or more</i>

P	60%-84%
E	59% or below

**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

**Dispute of Grade Policy** Provide the acceptable time period for disputing a grade on a paper, project, or exam.

**Late Assignments Policy**-Late assignments may be penalized a fraction of points but will be graded and counted.

**Extra credit policy:** Dr. Tax will provide an extra assignment as grade insurance in the last few weeks of the class. If you are at a boundary, successfully completing this assignment will bump you up.

### **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 the class 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>.

### **Notification of Objectionable Materials**

### **Accessibility and Accommodations for Students with Disabilities**

It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations. For

additional information on Disability Resources and reasonable accommodations, please visit <http://drc.arizona.edu>

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.



