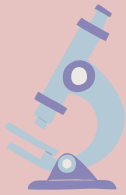
WELCOME TO TISSUE CULTURE BIOL.315

WHAT IS THIS COURSE ABOUT?

This course will address the fundamental skills and concepts required to culture and maintain mammalian cells in culture. Laboratory discussions, assignments and projects will allow students to develop basic eukaryotic tissue culturing techniques and explore tissue culture techniques in modern research and medical applications.

WHAT WILL I BE ABLE TO DO AT THE END OF THE COURSE?



- Visualize cells using proper microscope techniques.
- Use proper sterile technique to culture and maintain eukaryotic cell lines.
- Accurately quantify and subculture a specific quantity of cells from a eukaryotic cell line.
- Accurately follow laboratory protocols to detect and/or visualize biomolecules from tissue culture cells.
- Express relationships and quantities in appropriate mathematical forms for scientific modeling and investigations.

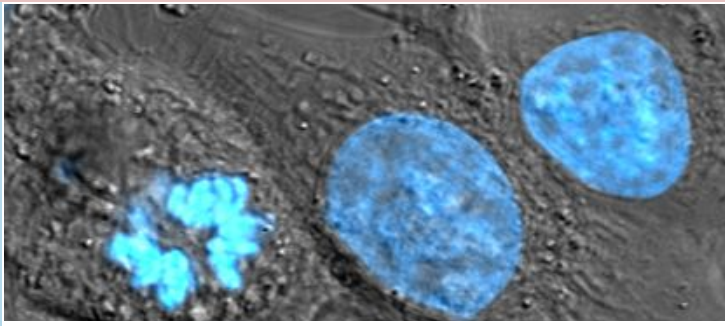
WHAT WILL BE EXPECTED OF ME?

This is a laboratory intensive, hands-on course. Learning happens by doing and participating in all activities. Data /artifacts/lab notebooks (which will be graded) will be generated nearly every laboratory meeting, therefore, it is important that you are in attendance to participate!

We look forward to getting to know you and work with you during this semester! I**f you have accommodations in place from Disability Services, it is critical that you reach out and schedule a meeting with your instructor as soon as possible to outline the success plan.**

We expect *all students* to:

- To show up, *on time*, for each and every laboratory session *.
- To prepare by reading the laboratory materials and taking the pre-lab quizzes, each week.
- To try! Mistakes are okay! That's how we learn!
- To ask questions when things are unclear.
- To treat your instructor, TA and peers with dignity and respect.
- To let your instructor know if things are not okay.



WHAT DO I NEED FOR THIS COURSE?

- lab coat.
- lab notebook.
- 3-ring binder.
- computer and reliable internet.

HOW WILL I BE GRADED?

Pre-lab quizzes: Delivered on Mycourses. Due 1 hour before your lab meets. 25%
Post-lab assignments: Turned into the assignment box. 35**%**
Graded in-lab items: Various artifacts will be handed in for a grade in the lab (i.e. healthy culture, stained cells, calculations). 30%
Lab notebook entries: Lab notebooks will be checked each week. 10%

*if you have an *excused absence,* points for the graded work may be made up by submitting an original, 2.5 to 3 page document explaining the history and practical applications of the technique that happened in the laboratory during your absence. Follow the syllabus to know what was missed and/or ask your instructor about the topic to write about. Please include references in your paper. *AI tools such as Google Bard and ChatGTP are not to be used.*

This make-up work will be due to the assignment box *no later than one week* passed the missed laboratory date. Students must contact their instructor about excused absences (e.g., medical situations) as soon as they are able. **Only two opportunities to make up missed points will be available throughout the semester.**

*Students arriving later than 15 minutes after the start time may lose points for graded work for that day.

Note: Turn-it-in Plagiarism detector will be activated in all assignment boxes. Any assignment that is not original work will result in a score of zero. If two instances of academic dishonesty occur, the student will receive a grade of "F" for the course.

WHO IS MY INSTRUCTOR?

Dr. Wright is the laboratory coordinator for Tissue Culture. lkwsbi@rit.edu

Zachary Ward is teaching the Thursday morning section. 9:30-12:20pm
Zachary_Ward@URMC.Rochester.edu

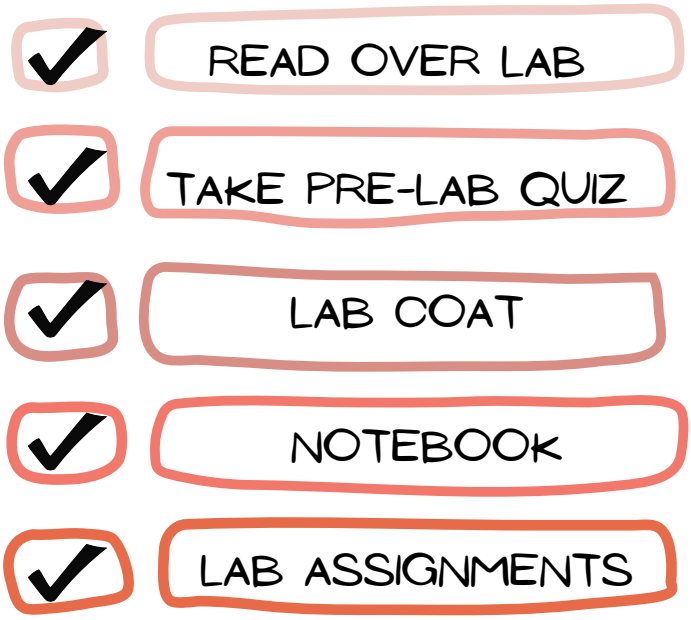
Dr. Ferran is teaching the Thursday afternoon section. 2-4:50pm.
mcfsbi@rit.edu

Dr. VanWinkle is teaching the Friday afternoon section. 2-4:50pm.
bxvsbi@rit.edu

A NOTE ABOUT PRE-LAB QUIZZES

Pre-lab quizzes are meant to help you prepare for the upcoming lab. They will be available by Sunday of each week. Quizzes will be graded at the end of each week, after all sections have completed them. *Quizzes cannot be completed after the deadline because answers will have been made available.* The lowest quiz score will be dropped.

WEEKLY CHECKLIST



Lab	Mon. of week	Activity	Pre-lab quiz due?	Post-Lab Assignment (LA) to upload	Graded in-lab item
1	15th Jan	Observation lab, Sterile technique demo and discussion, observe cells in microscope & hemocytometer	No	LA1 (sketches and calculations)	--
2	22nd Jan	P388 Suspension cells, counting, passage, growth curve counts	Yes	LA2 Properly labeled growth curve	Healthy passage of P388 cells, 24-48 hours post lab.
3	29th Jan	CHO Attachment cells, counting, flask passage and growth curve counts	Yes	LA3 Properly labeled growth curve	Healthy passage of CHO cells, 24 hours post lab.
4	5th Feb	Part I. Karyotype analysis on CHO cells. Part II: Counting practice with suspension cells	Yes	LA4 Properly labeled Karyotype figure	Record cell density from an unknown
5	12th Feb	Part I. Cell viability assay (Cell Countess). Part II. G-banding of chromosomes	Yes	--	Viability results
6	19th Feb	Part I. Cell viability assays using Countess slides. Part II. Cryopreservation of cells	Yes	---	Viability results

7	26th Feb	Isolate DNA from apoptotic and normal cells	Yes	--	--
8	4th March	DNA Gel Electrophoresis	Yes	LA5 Properly labeled figure of agarose gel and explaination	
	11th March	Spring Break		No classes this week	
9	18th March	Part I: Thaw cryopreserved cells Part II: Determine unknown culture density	Yes		Instructor check of viability and health
10	26th March	Luciferase transfection of CHO cells and harvest	Yes		Instructor check of viability and health
11	1st April	Plate reader assay for expression of luciferase expression.	Yes		Evidence of Lucifercase expression
12	8th April	Wound and cell migration assay	Yes	LA6 Cell migration calculations	
13	15th April	In-vitro Scratch or Cell migration Time-Course Assay	Yes	LA7 Properly labeled figure of Neurite Growth staining	
14	22nd April	Documentary and discussion	No		Reflection activity