



Center for Musculoskeletal Research

IND 532: Current Techniques in Musculoskeletal Research

Spring 2024
Monday 1-1:50pm

Course Co-Directors:

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Office hours: By appointment

Course Website: Blackboard

Prerequisites: Graduate standing or permission

Course Description: This course provides an overview of cutting-edge techniques that can be used to advance the trainees' research program and will familiarize trainees with Core facilities and unique expertise within the University. Lectures address a range of topics, including tissue mechanics, small animal surgery techniques, and URM core facilities. Lectures are designed for real time interaction, and student/fellows are encouraged to contribute to the discussion.

Attendance: Since this class is graded in part on participation, attendance is mandatory. Students are expected to arrive on time, fully attend and participate in ALL class sessions. Extenuating circumstances causing absence should be discussed with the instructor **before** the absence occurs, not post-facto. If you must miss a class, you can make it up by submitting a two-page paper on the topic for that day.

Assessment and Grading Criteria:

50% Attendance/participation

50% NIH style proposal one aim 'Research Approach' section

E-mail: You should only use email as a tool to set up a one-on-one meetings with Dr. Nichols, Dr. Muthukrishnan, or the course lecturers. Your message should include at least two times when you would like to meet and a brief (one-two sentence) description

of the reason for the meeting. Emails sent for any other reason will not be considered or acknowledged. Participation in class discussions asking questions is strongly encouraged during class. For more in-depth discussions, please plan to meet in person (via Zoom). Our conversations should take place in person rather than via email, thus allowing us to get to know each other better and fostering a more collegial and effective learning atmosphere (Courtesy of S.S Duvall, Salem College).

Academic Integrity: Academic integrity is a core value of the University of Rochester. Students who violate the University of Rochester University Policy on Academic Honesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since academic dishonesty harms the individual, other students, and the integrity of the University, policies on academic dishonesty are strictly enforced. For further information on the University of Rochester Policy on Academic Honesty, please visit the following website:

http://www.rochester.edu/college/honesty/docs/Academic_Honesty.pdf

Students in this course are expected to conduct themselves in an honest and ethical manner, as well as to respect the intellectual work of others. Students should complete all required readings and work on their own, though open discussions with others regarding course content and issues raised in the case studies is always encouraged. Any writing assignment completed in lieu of an approved absence must represent the student's own work, with any ideas or text taken from others being appropriated identified and cited.

Accommodations for students with disabilities: Students needing academic adjustments or accommodations because of a documented disability must contact the Disability Resource Coordinator for the school in which they are enrolled (see link below for contact information). <http://www.rochester.edu/eoc/DisabilityCoordinators.html>

Textbook:

No textbooks are assigned for this course.

Time & Place:

Mondays 1:00-1:50 pm

URMC SMD

Locations for each week are listed below

Lecture Schedule:

Date	Lecture Title	Presenter	Room
1/22/24	MicroCT/ In vivo imaging	Lyndsay Schnur, MS & Mark Kenney, PhD	1-9525/35 Northeastern Room
1/29/24	Mechanical testing of musculoskeletal tissues	Mark Buckley, PhD	1-9525/35 Northeastern Room
2/5/24	No class		
2/12/24	Small animal recovery surgery	Katie Nolan, DVM	1-9525/35 Northeastern Room
2/19/24	Mass spectrometry & Proteomics	Kyle Swovick, PhD	G-9576 LeChase Assembly Room
2/26/24	Genomics	John Ashton, PhD	1-9576 Ryan Case Method Room
3/4/24	Histological analyses	Alayna Loiselle, PhD	1-9525/35 Northeastern Room
3/11/24	No class		
3/18/24	Flow Cytometry	Ben Frisch, PhD	1-9525/35 Northeastern Room
3/25/24	Electron Microscopy	Karen Bentley, MS	1-9525/35 Northeastern Room
4/1/24	Metabolomics	Roman Eliseev, MD, PhD	1-9525/35 Northeastern Room
4/8/24	Measurements of pain	Megan Lindsay Falsetta Wood, Ph.D.	1-9525/35 Northeastern Room
4/15/24	Mouse Genetics	Anne Nichols, PhD	1-9525/35 Northeastern Room
4/22/24	Public Health Research for Musculoskeletal Health	Caroline Thirukumaran, PhD	1-9525/35 Northeastern Room
4/29/24	Intravital microscopy	Allison Yeh, PhD	1-9525/35 Northeastern Room