

## **Fundamentals B 2022:**

1/12 FundB 6-9 class 1 Organelles-Fraidenraich  
1/19 FundB 6-9 class 2 Mitochondria/secretion-Ivessa  
1/26 FundB 6-9 class 3 Nucleus/Cell cycle/Apoptosis-Lea  
2/2 FundB 6-9 class 4 Cell communication-Lea  
2/9 FundB 6-9 class 5 membranes/cholesterol-Suzuki  
2/16 FundB class 6 Cell bio of cancer-De Lorenzo  
2/23 FundB 6-9 class 7 cytoskeleton-Lambert

3/2 FundB 6-9 study week

### **3/9 FundB 6-9 midterm**

3/16 FundB 6-9 class 8 Stem Cells-Fraidenraich  
3/23 FundB class 9 control of gene expression-Ivessa  
3/30 FundB class 10 Development-Fraidenraich  
4/6 FundB 6-9 class 11 mechanisms of angiogenesis-Sawada  
4/13 FundB class 12 Genetically modified cells-Ivessa  
4/20 FundB class 13 Immunology-Salgame  
4/27 FundB class 14 Specialized tissue-heart-Babu

5/4 Fund B Study week

### **5/11 Fund B final exam**

## **Fundamentals in Biomedical Sciences B: Cell Biology – GSND N 500B**

**Welcome to the Fundamentals of Biomedical Sciences.** The class will meet once a week, starting on Wednesday, January 12th (from 6pm to 9pm). The course covers basic concepts in cell biology and serves as a foundation for elective courses within the program.

### **Diego Fraidenraich, PhD**

Department of Cell Biology and Molecular Medicine  
New Jersey Medical School  
[fraidedi@njms.rutgers.edu](mailto:fraidedi@njms.rutgers.edu)

### **Course Description:**

In this course, students are introduced to basic cellular structure and function. Topics include: an introduction to the techniques used for studying cell biology, biomembranes, cell compartments, exocytosis and endocytosis, the nucleus, cell cycle and apoptosis, cell signaling, cytoskeleton, biology of cancer, cardiac tissue, stem cells, development, genetic modification of a cell/organism, gene expression and immunology. The lecture series provides an overview of important concepts in cell biology. Key experiments are described and some of the relevant topics of cell biology in the news are discussed. Slides will be provided before each lecture.

In 2022 we will offer a hybrid course (in-person and remote). Attendance is not mandatory, as live-streaming via zoom will be in place. Lectures may be recorded and can be accessed through Canvas (current year) or video@njms (prior years). We will post the zoom or webex link before the lecture day on a weekly basis, and the recordings the next day after the lecture day. Lecturers will be available via e-mail to answer questions students have on material.

Two exams will be given, one mid-semester and one at the end. The final is not cumulative. Exam questions will be multiple choice via examsoft. Each lecture will be given equal weight and 10-point assignment on the exam. The grade will be computed at the end of the semester based on the percentage of points earned out of the total points available. This final average may or may not be scaled on a curve, depending on class performance.

The lectures contain a lot of information. We recommend that you do not leave the study to the end. You should at least go over the slides or the recordings every week. We also encourage you to contact the lecturer via email with specific questions.

**Recommended Textbook(s)** – Most of the lectures are based on chapters from different books, which are available at the Library. Below are some of the books: Essential Cell Biology 2nd edition by Alberts et al., 2004, Garland. Molecular Biology of the Cell by Alberts et al., Garland. Molecular Cell Biology, 5th edition, by Lodish et al., 2003, Freeman. The Cell and Molecular Approach by Cooper and Hausman, 2007, Sinauer.

Textbooks do NOT need to be purchased. The student is encouraged to focus on lecture's slides, as each lecturer has his/her own preferences

**Location** – Medical Science Building B552 or B556

**Additional contacts:**

Andreas Ivessa, PhD  
Office: MSB I-518  
Phone: 973-972-4504  
[ivessaan@njms.rutgers.edu](mailto:ivessaan@njms.rutgers.edu)

Carolyn Suzuki, PhD  
Office: ICPH E450S  
Phone: 973-972-1555  
[suzukick@njms.rutgers.edu](mailto:suzukick@njms.rutgers.edu)

Michael A. Lea, PhD  
Office: ICPH E340V  
Phone: 973-972-5345  
[lea@njms.rutgers.edu](mailto:lea@njms.rutgers.edu)

Muriel W. Lambert, PhD  
Office: MSB C-571  
Phone: 973-972-7293  
[mlambert@njms.rutgers.edu](mailto:mlambert@njms.rutgers.edu)

Gopal Babu, PhD  
Office: MSB G-661  
Phone: 973-972-5376  
[babugo@rutgers.edu](mailto:babugo@rutgers.edu)

Mariana De Lorenzo, PhD  
Office: MSB I-516  
Lab: MSB I-516  
Phone: 973-972-0822  
[delorems@njms.rutgers.edu](mailto:delorems@njms.rutgers.edu)