**BIOM 600 Cell Biology and Biochemistry
Fall 2019**

**Course Coordinator:** Kurt A. Engleka, PhD (“Ingelkay” hard “g”)
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**Weekly Office Hours:** Kurt A. Engleka, PhD
Thursdays, 3:00 pm – 5:00 pm, 09-134 SCTR

(also by appointment)

Insert TA Info here

Fridays, 2:00 pm – 4:00 pm, 09-134 SCTR

Mondays, 2:00 pm – 4:00 pm, 09-134 SCTR

Tuesdays, 4:00 pm – 6:00 pm, 09-134 SCTR

**Textbook:** **Molecular Biology of the Cell**, Eds. Alberts, et al. 6th edition

(recommended but not required).

Also, assignment/small group problems with answers are obtained from **The Problems Book: for Molecular Biology of the Cell (Sixth Edition) by John Wilson and Tim Hunt** (not required).

**Lectures:** Mon, Wed, and Fri – 10:30 am – 11:50 am
CRB Austrian Auditorium.

**On-Line Lectures** Prerecorded and available on Mediasite

**Small Group Sessions:** Attendance is mandatory since take place of exams (Austrian Auditorium, JMB Class of ’62 in John Morgan, 253 BRB as assigned)

**Biochemistry Quiz:** Open notes/on-line. To be completed by September 18, 2019

**Lecture Assessments:** Open notes/on-line as assigned.

**Exams:** 10:30 am – 12:30 pm: Mon, Sep 23 (Smilow Auditorium), Wed, Nov 13 (BRB Auditorium), and Wed, Dec 18 (Smilow Auditorium)

Please see the Course Overview document for further information.

THEME I: INFORMATION FLOW AND SIGNAL TRANSDUCTION

Prerecorded

Mediasite Protein Purification (9-4-13) Mike Ostap
Mediasite Immunological Techniques (9-6-13) Mickey Marks
Mediasite Basics of Protein Structure Kate Ferguson

and Folding (9-9-13)

#### Wed, Aug 28 Course Introduction/Keynote Melike Lakadamyali

Fri, Aug 30 Intro to Signal Transduction TAs/Engleka

Mon, Sep 2 No Class (Labor Day)

Wed, Sep 4 Protein-Protein Interactions Ronen Marmorstein

Fri, Sep 6 G-Protein Coupled Receptors and G-Proteins TAs

 – Small Groups

Mon, Sep 9 Tyrosine Kinase and Phosphatases John Seykora

Serine and Threonine Kinases Frank Lee

Wed, Sep 11 Ubiquitin-Mediated Proteolysis Luca Busino

Fri, Sep 13 Nuclear Receptor Signaling Mitch Lazar

Mon, Sep 16 Calcium Signaling and Phospholipases Kevin Foskett

Wed, Sep 18 GTPases and Phosphoinositides Margaret Chou

Fri, Sep 20 Exam Review TAs

Mon, Sep 23 Theme I Exam (50/100 points (10:30 am-12:30 pm, Rubenstein Auditorium, SCTR)

THEME II: COMPARTMENTATION

Prerecorded

Mediasite Basics of Imaging (9-12-13) Andrea Stout

Wed, Sep 25 Advanced Imaging Andrea Stout

Fri, Sep 27 Biological Membranes (Small Groups) Engleka/TAs

Mon, Sep 30 Protein Biogenesis and Translocation Jeremy Wilusz

into the Endoplasmic Reticulum

Wed, Oct 2 Protein Folding and Assembly in the Mickey Marks
 Endoplasmic Reticulum

Fri, Oct 4 ER Protein Translocation/Folding - Small Groups Engleka/TAs

Mon, Oct 7 Mechanisms of Vesicular Transport Mickey Marks

Wed, Oct 9 Golgi Function and Protein Sorting in the Engleka/TAs

 Secretory Pathway/ Exocytosis and Secretion

* Small Groups

Fri, Oct 11 Mitochondria Function and Biogenesis Andy Dancis

Mon, Oct 14 Golgi Function and Protein Sorting in the Engleka/TAs

Secretory Pathway/ Exocytosis and Secretion

* Small Groups

Wed, Oct 16 Endocytosis and Lysosomal Degradation Mickey Marks

Fri, Oct 18 Nuclear Architecture and Nucleocytoplasmic Ben Black
Transport

Mon, Oct 21 Small Groups Engleka/TAs

THEME III: THE CYTOSKELETON, ADHESION, AND MOTILITY

Wed, Oct 23              Actin Cytoskeleton                  Roberto Dominguez

Fri, Oct 25                 Myosins                                 Mike Ostap

Mon, Oct 28              Microtubules                            Erika Holzbaur

Wed, Oct 30                Microtubule-Based Motility      Erika Holzbaur

Fri, Nov 1 Cell Adhesion John Weisel

Mon, Nov 4 Cell/Extracellular Interactions John Weisel

Wed, Nov 6 Intermediate Filaments Paul Janmey

Fri, Nov 8 Mitosis and Cytokinesis Erfei Bi

Mon, Nov 11 Exam Review TAs

Wed, Nov 13 Theme III Exam – 100 points (10:30 am-12:30 pm, BRB Auditorium)

THEME IV: SOLUTE TRANSPORT AND ION CHANNELS

Prerecorded

Mediasite Intro to Kinetics (10-11-13) Rahul Kohli

Fri, Nov 15 Principles of Ion Transport Kevin Foskett

Mon, Nov 18 Ion Channels 1 Toshi Hoshi

Wed, Nov 20 Ion Channels 2 Toshi Hoshi

Fri, Nov 22 Integrated Functions of Ion Channels Kevin Foskett

Mon, Nov 25 Problem Set - Small Groups TAs

Nov 27-Nov 29 No Class (Thanksgiving Break)

THEME V: CELL FATE

Mon, Dec 2 Cell Cycle 1: Cyclins and CDKs Frank Luca

Wed, Dec 4 Cell Cycle 2: The Rb-E2F Pathway TAs

* Small Groups

Fri, Dec 6 Apoptosis Igor Brodsky

Mon, Dec 9 Metabolism Zoltan Arany

Wed, Dec 11 Energy Homeostasis Katy Wellen

Fri, Dec 13 Autophagy Sara Cherry

Mon, Dec 16 Exam Review TAs

Wed, Dec 18 Theme V Exam – 100 points (10:30 am-12:30 pm, Rubenstein Auditorium, SCTR)

**Faculty Lecturers**

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Jeremy Wilusz (wilusz@pennmedicine.upenn.edu) – 898-8862