Lectures in biochemistry and molecular biology 2026/2027: From molecule to cell

The Conference Room of the Nencki Neurobiology Centre, 9-10 am, Wednesdays

I. Integrative cellular physiology

1. Cellular structure, signaling and function

- **Protein synthesis** (M. Dziembowska) **October 14, 2026**
- **Posttranslational modifications of proteins and their functional significance** (A. Filipek) **October 21, 2026**
- **Structure and function of cellular membranes** (K. Kwiatkowska) **October 28, 2026**
- **Microtubules and microtubule-based structures** (D. Włoga) **November 4, 2026**
- **Cell motility and the cytoskeleton** (J. Rędowicz) **November 18, 2026**
- **Transport across biological membranes** (P. Koprowski) **November 25, 2026**
- **Principles of cellular metabolism - bioenergetics** (D.Dymkowska) **December 2, 2026**
- **Mitochondrial stress response** (J. Szczepanowska) **December 9, 2026**

2. Cell cycle and cell fate

- **Cellular senescence – the mechanism and the role in organismal aging and age-related diseases** (G. Mosieniak) **December 16, 2026**
- **Autophagy and cell death – molecular mechanisms and function** (I. Ciechomska) **January 13, 2027**
- **Molecular mechanisms of cancerogenesis – the current view** (K. Piwocka) **January 20, 2027**
- **Current state of the anti-cancer treatments and resistance to therapies** (K.Leszczyńska) **January 27, 2027**

Exam February 3, 2027

Break

II. Genetic information

- **Nuclear organization of the genome – from structure to function** (A. Magalska) **February 17, 2027**
- **Regulatory mechanisms of transcription** (B. Kamińska) **February 24, 2027**
- **Remember and forget: the mechanisms of epigenetic memory** (P. Mikulski) **March 3, 2027**
- **Genome evolution** (A. Pękowska) **March 10, 2027**

II. From cell signaling to the system

- **Inter-organelle crosstalk in coordination of cellular function** (D. Malińska) **March 17, 2027**
- **Signal transduction and regulation of metabolism** (G. Sumara) **March 24, 2027**
- **Bioactive lipids in cell signaling and metabolic regulation** (K. Kolczyńska-Matysiak) **March 31, 2027**
- **Impaired homeostasis of lipids metabolism** (J. Janikiewicz) **April 7, 2027**
- **The influence of the microbiota on immunity** (T. Wypych) **April 14, 2027**
- **Regulation of cell signaling by microRNAs** (U. Wojda) **April 21, 2027**

III. Technology driven research - Methods in biochemistry and cell biology

- **Current approaches in methods of light microscopy** (J. Szymański) **April 28, 2027**
- **Modern applications of cellular electrophysiology in cell biology** (T. Wójtowicz) **May 5, 2027**
- **Electron microscopy – a tool for ultrastructural analysis** (H. Nieznańska) **May 12, 2027**
- **Modern flow cytometry - driver of technology-driven discoveries** (M. Kusio-Kobiałka) **May 19, 2027**
- **Advances in high-throughput sequencing** (B.Wojtaś) **May 26, 2027**
- **Regulatory genomics/bioinformatics** (M. Dąbrowski) **June 2, 2027**
- **Quantitative approaches in cell biology** (A. Kłosin) **June 9, 2027**

Exam June 16, 2027