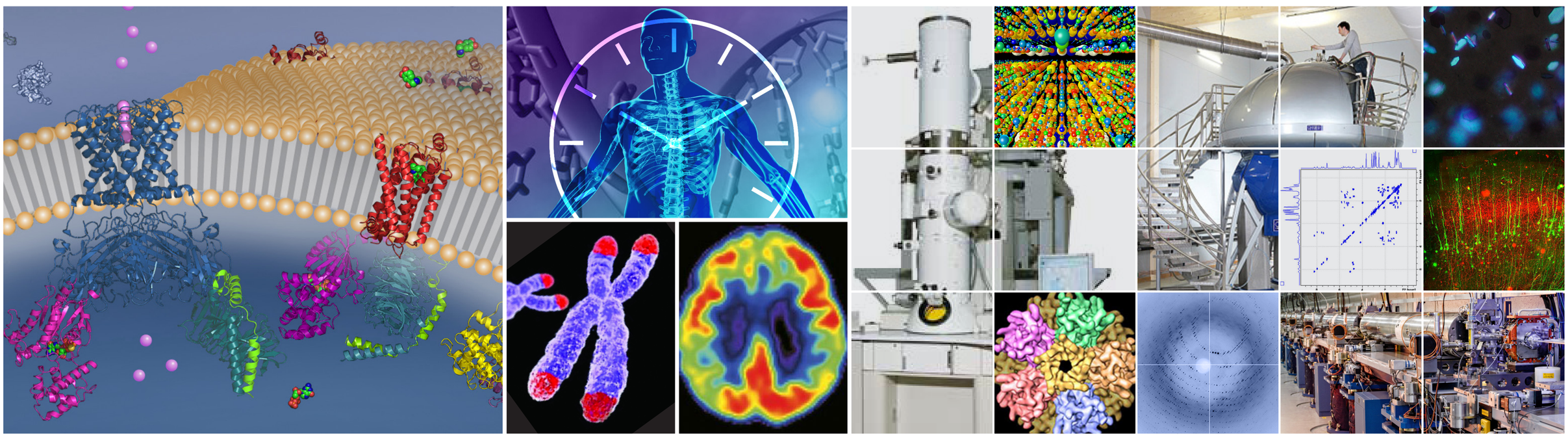
International Conference

# biomembranes'16

SEPTEMBER 26–30

## MECHANISMS OF AGING AND AGE-RELATED DISEASES

Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russia



## Membranes...

Research on biological membranes occupies a central position in cellular and molecular biology. Biomembranes form very complex, dynamic and heterogeneous structures, in both space and time, critical for cellular function. Membrane proteins are involved in transport of ions and nutrients, signal transduction and energy conversion, and their malfunctions often result in numerous serious diseases, such as Alzheimer's, Parkinson's, diabetes, cancers, heart failure and others. While membrane proteins represent roughly one-third of the proteins encoded in the human genome, about 70% of modern drugs target these proteins, emphasizing their crucial value for pharmacology and medicine. Biological membranes are also a focus of intense investigations in soft matter and theoretical physics.

## And Methods for their studies…

X-ray and neutron scattering, NMR, electron microscopy, mass-spectrometry and single molecule fluorescence spectroscopy are key methods to study structural aspects and functional mechanisms of membrane proteins at time resolutions from femtoseconds to minutes, and spatial scales from atoms to whole organisms. The last few years have brought multiple breakthroughs in instrumentation and technologies, enabling the pursuit of new directions and paradigms in a variety of fields including studies of biological membranes.

A major goal of this conference is to provide up-to-date information about research on biomembranes and to consolidate cross-disciplinary international scientific efforts in this field. Our speakers will focus on cutting-edge problems of modern integrative structural biology of biomembranes and membrane proteins, theoretical biophysics of membrane systems and computer modelling. The conference will highlight the role of biomembranes in aging and age-related diseases such as cancer, neurodegenerative (Alzheimer's, Parkinson's) and cardiovascular diseases.

The talks will be given by world-leading scientists from Russia, USA, Germany, France, UK, China and Japan. Participants will have a great opportunity to update their knowledge interacting with world-leading scientists who will overview amazing recent advances in the fields under discussion.

## Preliminary list of keynote speakers:

**Raymond Stevens** (Bridge Institute, USC, USA)
**Ernst Bamberg** (MPI of Biophysics, Germany)
**Marat Yusupov** (IGBMC, France)
**Vladimir Skulachev** (MSU, Russia)
**Werner Kühlbrandt** (MPI of Biophysics, Germany)
**Isao Shimokawa** (School of Medicine, University of Nagasaki, Japan / President of Japan Society for Biomedical Gerontology)
**Norbert Dencher** (TU Darmstadt, Germany)

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