



# CONFERENCE PROGRAM BOOK

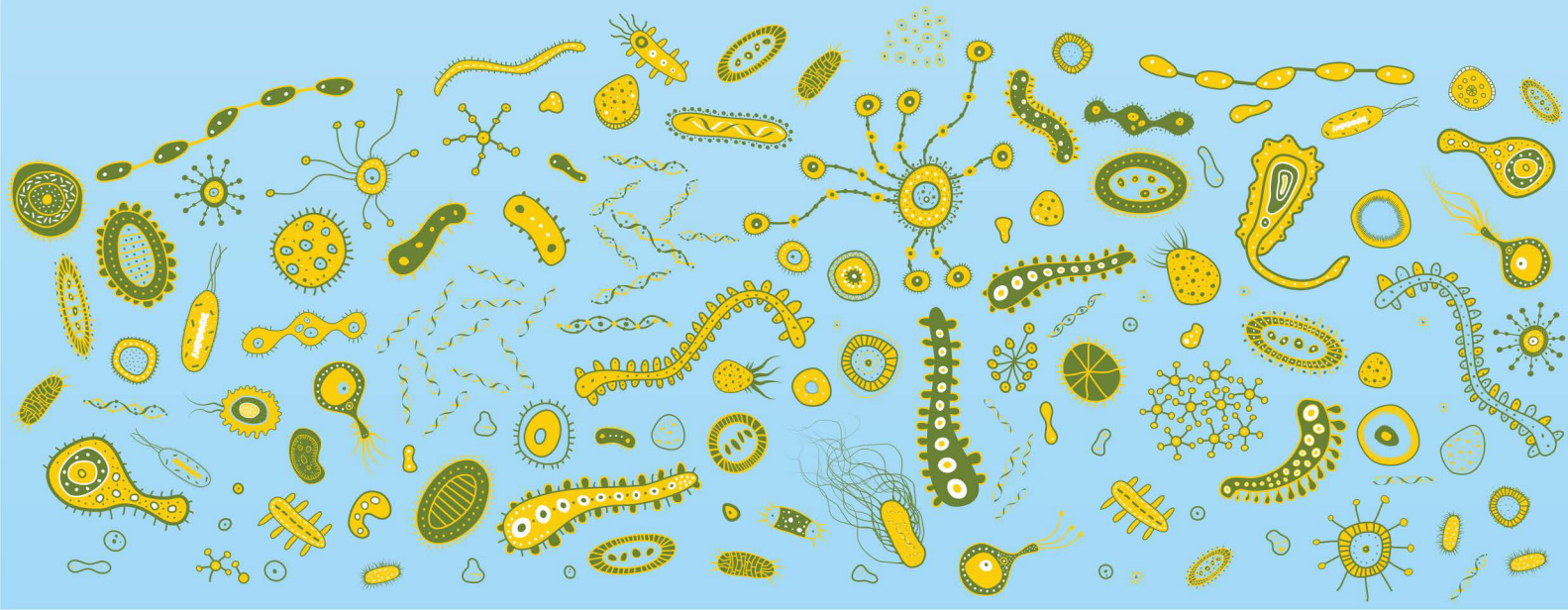


Lomonosov Moscow State University

International scientific conference in memoriam of the 80th anniversary of professor Mikhail V. Gusev

## “Physiology and biotechnology of oxygenic photoautotrophic microorganisms: looking into the future”

*27th–30th of May 2014  
Moscow, Russia*



## Committee Information

### Conference Chairs

**Mikhail Kirpichnikov  
(Conference Chair)**



Professor, member of Russian Academy of Sciences, Dean of Biological Faculty, MSU, Moscow, Russia

**Katerina Tikhonova  
(Deputy Chair)**



Director, NIRC MSU, Moscow, Russia

**Elena Lobakova  
(Deputy Chair)**



Professor, Bioengineering Department, Biological Faculty of MSU, Moscow, Russia

### Scientific Committee

**Sergey Shestakov**



Professor, member of Russian Academy of Sciences, Department of Genetics, Biological Faculty, MSU, Moscow, Russia

**Inna Khozin-Goldberg**



Associate Professor, Microalgal Biotechnology Laboratory, The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Beer-Sheba, Israel

**Anatoly Gitelson**



Professor, Center for Advanced Land Management Information Technologies, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, USA

**Diana Ivanova**



Professor, Dean of Pharmacy Faculty, Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria

**Taku Misonou**



Professor, Interdisciplinary Graduate School of Medical and Engineering, Yamanashi University, Japan

**Raif Vasilov**



Professor, Co-chair of Bioenergetics Russian Technology Platform, National Research Centre "Kurchatov Institute", Moscow, Russia

**Andrei Rubin**



Professor, corresponding member of Russian Academy of Sciences, Chair of Biophysics Department, Biological Faculty, MSU, Moscow, Russia

**Dmitry Los**



Professor, Head of the Laboratory of Intracellular Regulation, Timiryazev Institute of Plant Physiology, Russian Academy of Sciences, Moscow, Russia

**Yuri Balnokin**



Professor, Head of the Laboratory of Ion Transport and Salt Tolerance, Timiryazev Institute of Plant Physiology, Russian Academy of Sciences, Moscow, Russia

**Shafika Suleymanova**



Associate Professor, Dean of Biological Faculty, Kyrgyz National University, Kyrgyzstan

**Natalia Nemtseva**



Professor, Head of the Laboratory of Aquatic Microbiology, Institute of Cellular and Intracellular Symbiosis, Russian Academy of Sciences (Urals Division), Orenburg, Russia

**Alexei Solovchenko**



Lead Scientist, Bioengineering Department, Biological Faculty of MSU, Moscow, Russia

**Galina Belyakova**

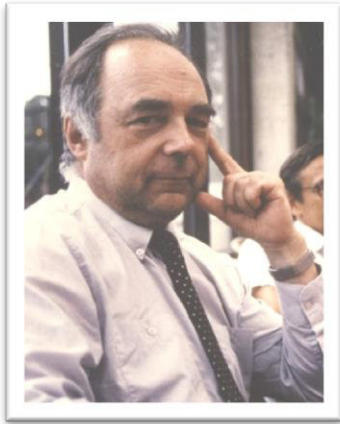


Associate Professor, Department of Mycology and Algology, Biological Faculty of MSU, Moscow, Russia

**Larisa Semenova  
(Conference Secretary)**



Senior Scientist, Bioengineering Department, Biological Faculty of MSU, Moscow, Russia

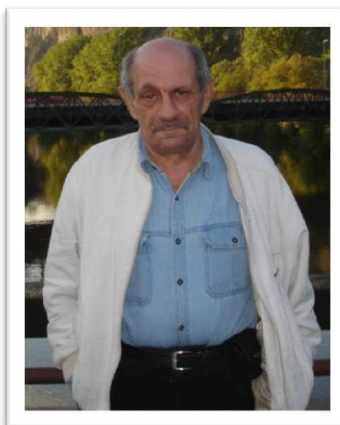


**Professor Mikhail V. Gusev**

(1934-2005)

*Dean of the Faculty of Biology, Lomonosov MSU*

Since 1973 till 2005 Professor Gusev hold the position of dean of the biological faculty at Lomonosov MSU. He was co-founder of the International Biotechnology Center, the Centre of Ecology, the Centre of Molecular Medicine, and the Sector of Biopolitics at the faculty as well as the Lab of Evolutionary Gerontology. M.V. Gusev contributed vastly to the establishment of new faculties (Fundamental Medicine and Bioengineering and Bioinformatics). Professor Gusev was a world-known scientist in cell physiology, physiology and biochemistry of cyanobacteria and, especially, in cyanobacteria-plant symbioses. His biocentric approach laid the foundation for the new branch of science known as integrative biology.



**Professor Mark N. Merzlyak**

(1946-2009)

*Professor of Biological Faculty, Lomonosov MSU*

Professor Merzlyak was, for many years, in the middle of free radical biology in Soviet Union, then in Russia. He pioneered the investigation of lipid peroxidation mechanisms and effects in plants. Professor Merzlyak facilitated immensely the progress of the fields of biological spectroscopy, optics of phototrophic organisms and remote sensing. His contributions were widely recognized by international scientific community and cooperated fruitfully with scientists from many countries. Mark Merzlyak was a charismatic leader, fellow scientist, and a great mentor for junior colleagues.



## **Conference Information**

### **Registration Desk**

The conference registration desk can be found in the Recreation Hall of the M1 Auditorium of the Biological Faculty (10:00–16:00, May 26) and at the auditorium B145 of the Lomonosov Building (9:00–10:00, May 27), see the map on the page 19. The registration desk will remain open for the duration of the conference. Your contacts will be Dr. Larisa Semenova and Prof. Elena Lobakova.

### **Badges, Bags and Security**

For security reasons and for catering purposes please make sure you wear your conference badge at all time during the conference. Replacements for lost badges are available from the registration desk. For easy recognition, we would advise you to insert a business card inside your delegate bag – should your bag be misplaced replacements may not always be available.

### **Badge Colour Coding**

Red: Organizers and members of organizing committee

Blue: Invited and keynote speakers

Yellow: All participants and speakers

### **Conference Sessions**

The sessions will take place at the Biological Faculty and in the Lomonosov Building. Please see the full session program below and on the last page of this booklet for individual session and presentation timings.

### **Poster Presenters**

Poster presenters should refer to the program or information board for details of their poster number.

### **Posters will be located at the Biological Faculty (Auditorium M1, Recreation Hall).**

Please note that any posters remaining in place after the times specified above maybe removed by the organizers who accept no responsibility for loss or damage.



**Important:** Posters should be fixed to board with push pins. Please see the conference organizer at the registration desk if you require fixing materials.

### **Oral Presenters**

Oral presenters are reminded to be in their relevant meeting room no later than 15 minutes before the start of the session in the order to meet with the session chair and to finalize the set-up of presentation visuals with the room technicians.

**All presentations must be preloaded on the PC's in the relevant room at least one hour before the relevant session.**

### **Messages**

Messages for delegates received at the Registration Desk will be posted on the message board in the registration area. You are welcome to use the message board to contact fellow delegates.

### **Catering**

Mid-session refreshments and lunch will be served near respective session place. Please see the program in your Delegate Program Booklet for refreshment timings.

### **Conference contacts**

Bioengineering Department, Biological faculty, Lomonosov Moscow State University  
1/21, Leninskie Gori, Moscow 119234, Russia

Information and help via e-mail (Russian, English): [algae-conf@mail.ru](mailto:algae-conf@mail.ru)

Tel. +7(495)939-20-83 (Russian only)

### **Information**

<http://lomonosov-msu.ru/rus/event/2139/>

<http://www.bio.msu.ru>

### Oral Program

Tuesday, May 27	
10:05–11:50	Plenary Session 1. Chair <b>Elena Lobakova</b> (Lomonosov Moscow State University, Moscow, Russia), <b>Katerina Tikhonova</b> (NIRC Moscow State University, Moscow, Russia)
10:05–10:50	[I.1] <b>Mikhail Kirpichnikov</b> (Lomonosov Moscow State University, Moscow, Russia) Bioeconomy and Global Challenges: Going Green with Microalgae
10:50–11:20	[I.2] <b>Dmitry Los, Anna Zorina, Kirill Mironov, Galina Novikova</b> (Timiryazev Institute of Plant Physiology RAS, Russia) Genomics and phosphoproteomics of stress responses in cyanobacteria
11:20–11:50	[I.3] <b>Inna Khozin-Goldberg</b> (Ben-Gurion University of the Negev, Israel) Identification and Characterization of DGAT1 in microalgae
11:50–12:15	<i>Coffee-break</i>
12:15–13:30	Session 1.1. Chairs <b>Natalia Nemtseva</b> (Russia), <b>Galina Belyakova</b> (Russia)
12:15–12:30	[O1.1] <b>Mikhail Nikitin</b> (Belozersky Institute of Physico-Chemical Biology, Lomonosov MSU, Moscow, Russia), Sapozhnikov Ph.V., Gaynanova O.Yu. (Shirshov Institute of Oceanology RAS, Moscow, Russia), Samylina O.S. (Winogradsky Institute of Microbiology RAS, Moscow, Russia) <i>Nitzschia communis</i> from soda lakes of Kulunda steppe as a potential candidate for biotechnological cultivation
12:30–12:45	[O1.2] <b>Anna Temraleeva</b> (Institute of Physico-Chemical and Biological problems of Soil science RAS, Pushchino, Russia), Mincheva E.V., Bukin Yu.S. (Limnological Institute SB RAS, Irkutsk, Russia), Sherbakov D.Yu. (Limnological Institute SB RAS, Irkutsk, Russia; Irkutsk State University, Irkutsk, Russia), Pinsky D.L. (Institute of Physico-Chemical and Biological Problems of Soil Science RAS, Pushchino, Russia) <i>Spongiosarcinopsis</i> , gen. nov. (Chlorophyta, Chlorophyceae), a new genus of soil green algae
12:45–13:00	[O1.3] <b>Olga Boldina</b> (Komarov Botanical Institute RAS, Saint-Petersburg, Russia) Chlamydomonad ultrastructure correlates to phylogeny
13:00–13:15	[O1.4] <b>Elena Lobakova</b> , Selyakh I.O., Semenova L.R., Chivkunova O.B., Shcherbakov P.N. (Lomonosov MSU, Moscow, Russia) New strains of green carotenogenic microalgae isolated from different habitats in Russian Federation

13:15–13:30	[O1.5] <b>Konstantin Chekanov</b> , Selyakh I.O., Semenova L.R., Solovchenko A.E, Lobakova E.S. (Lomonosov MSU, Moscow, Russia) The carotenogenic microalga <i>Haematococcus pluvialis</i> (Chlorophyceae) from White Sea as a source of astaxantin	
13:30–15:00	<i>Lunch</i>	
15:00–15:30	Plenary Session 2. Chair <b>Elena Lobakova</b> (Russia)  [I.4] <b>Sergei Pogosyan</b> (Lomonosov Moscow State University, Russia) Biophysical aspects of photobiotechnology	
15:35–17:20	Session 3.1—Memorial Session of Professor Mark N. Merzlyak. Chairs <b>Inna Khozin</b> (Israel), <b>Diana Ivanova</b> (Bulgaria)	Session 4.1 Chairs <b>Taku Misonou</b> (Japan), <b>Irina Selyakh</b> (Russia)
15:35–15:50	[O3.1] <b>Anvar Ismailov</b> (Lomonosov MSU, Moscow, Russia) Reactive oxygen species role in the bioluminescence of marine glowing bacteria	[O4.1] <b>Valery Petrosyan</b> (Lomonosov MSU, Moscow, Russia) Prevention of cyanotoxin pollution of aquatic ecosystem of Moscow region by means of algacenos correction with <i>Ch. vulgaris</i> strain IPPAS C-111
15:50–15:05	[O3.2] <b>Elena Selivanova, Nemtseva N.V.</b> (Institute for Cellular and Intracellular Symbiosis, Orenburg, Russia), <b>Lobakova E.S., Solovchenko A.E.</b> (Lomonosov MSU, Moscow, Russia) Pigment and fatty acid accumulation in the algae from the genus <i>Dunaliella</i> grown under high irradiances	[O4.2] <b>Elena Patova, Schemelinina T.N., Anchugova E.M., Tarabukin D.V.,</b> (Institute of Biology, Komi Science Centre, Syktyvkar, Russia), <b>Ocheretenko D.P.</b> (OJSC “Mondi”, Syktyvkar, Russia) <b>Volodin V.V.</b> (Institute of Biology, Komi Science Centre) Using strains of green microalgae <i>Acutodesmus obliquus</i> for cleaning of forest industrial complex wastewater
15:05–16:20	[O3.3] <b>Sergiu Dobrojan, Dobrojan G.N., Startulat I.I., Trofim A.A.</b> (State University of Moldova, Cishinau, Moldova) Determination of	[O4.3] <b>Bolatchan Zayadan, Sadvakasova A.K.</b> (Al-Farabi Kazakh National University, Almaty, Kazakhstan), <b>Saleh M.M., Gaballah M.M.</b> (Suez Canal

	optimal irradiance for cultivation of the microalga <i>Anabaenopsis</i> sp.	University, Ismaillia, Egypt) Perspective mutant strains of <i>Parachlorella kessleri</i> used in phycoremediation in wastewater ecosystems
16:20–16:50	<i>Coffee-break</i>	
16:50–17:05	[O3.4] <b>Konstantin Neverov</b> (Lomonosov MSU, Moscow, Russia) Photoprotective strategies of unicellular red alga <i>Rhodella violacea</i> : delta-pH gradient, antenna rebuilding and light acclimation	[O4.4] <b>Ivan Koniukhov</b> (Lomonosov MSU, Moscow, Russia) A flat-type photobioreactor equipped with an automatic system of microalgae growth monitoring <i>via</i> light absorption, scattering and chlorophyll fluorescence
17:05–17:20	[O3.5] <b>Natalia Shoman</b> (Kovalevsky Institute of Biology of the Southern Seas RAS, Sevastopol, Russia) Main regularities of change in c/Chl <i>a</i> ratio of some species marine diatoms depending on the light and temperature conditions of their cultivation	[O4.5] <b>Tatyana Pantsyrnaya</b> , Dyakov N.V. (Moscow State University of Mechanical Engineering), Chirkov A.M. (HDSI corp., USA) Improving gas exchange in a flat-panel photobioreactor
17:20–18:00	Poster Session	

Wednesday, May 28	
10:05–11:50	Plenary Session 3. Chair <b>Katerina Tikhonova</b> (NIRC Moscow State University, Moscow, Russia), <b>Elena Lobakova</b> (Lomonosov Moscow State University, Moscow, Russia)
10:00–10:45	[I.5] <b>Ilya Moiseev</b> (Gubkin Russian State University of Oil and Gas, Moscow, Russia) Green Chemistry: 10 years down the road
10:45–11:15	[I.6] <b>Larisa Popova</b> , Balnokin Yu.V. (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia) Molecular mechanisms underlying salt tolerance of marine microalgae
11:15–11:45	[I.7] <b>Elumalai Sanniyasi</b> (Madras University, Chennai, India) Phycoremediation of the waste water from leather, textile dye, and cement industry from South India

11:45–12:15	<i>Coffee-break</i>	
12:15–13:30	Session 2.1 Chairs <b>Dmitiy Los</b> (Russia), <b>Bolatkhan Zayadan</b> (Kazakhstan)	
12:15–12:30	[O2.1] <b>Jan Červený</b> , Búzová D. (Global Change Research Centre AS CR, Drásov, Czech Republic), Zorina A.A., Novikova G.V., Sinetova M.A. (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia) Mechanisms of long-term heat stress tolerance of <i>Synechocystis</i> sp. PCC 6803 during intensive cultivation in photobioreactors	
12:30–12:45	[O2.2] <b>Kirill Mironov</b> (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia) Red light regulates $\omega$ -3 fatty acid accumulation in <i>Synechocystis</i> sp.	
12:45–13:00	[O2.3] <b>Anna Zorina</b> (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia) Involvement of serine/threonine protein kinase SpkE in cold stress response in the cyanobacterium <i>Synechocystis</i> sp. PCC 6803	
13:00–13:15	[O2.4] <b>Irina Elanskaya</b> , Timofeev K.N., Muronets E.M., Lukashov E.P. (Lomonosov MSU, Moscow, Russia), Toporova V.A. (Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow, Russia) The role of respiratory electron transport chain in regulation of photosystem I activity in the cyanobacterium <i>Synechocystis</i> sp. pcc 6803	
13:15–13:30	[O2.5] <b>Elina Chelebieva</b> , Minyuk G.S., Chubchikova I.N. (Kovalevsky Institute of Biology of the Southern Seas RAS, Sevastopol, Russia) Characteristic features of secondary carotenogenesis in microalga from the family <i>Scenedesmaceae</i>	
13:30–15:00	<i>Lunch</i>	
15:00–15:30	Plenary Session 4. Chair <b>Alexei Solovchenko</b> (Russia)  [I.8] <b>Anatoly Tsygankov</b> , Gavrishcheva A.I., Batirova Kh.A. (IFPB RAS, Puschino, Russia) Hydrogen evolution by marine microalgae	
15:35–17:20	Session 1.2. Chairs <b>Olga Gavrilova</b> (Russia), <b>Irina Selyakh</b> (Russia)	Session 4.2. Chairs <b>Alexander Tambiev</b> (Russia), <b>Shafika Suleymanova</b> (Kyrgyzstan)
15:35–15:50	[O1.6] Averina S.G., <b>Olga Gavrilova</b> , Velichko N.V., Skopina M.Yu., Pinevich A.V. (Saint-Petersburg State University, Saint-Petersburg,	[O4.6] <b>Maksim Kulikovskiy</b> , Gusev E.S. (Institute for Biology of Inland Waters RAS, Borok, Yaroslavl, Russia) Davidovich N.A. (Karadag Nature Reserve, Kurortnoe,

	Russia) Prokaryotic consortia involving cyanobacteria of the genus <i>Prochlorothrix</i>	Feodosiya, Crimea, Russia) Biological evidences for choosing diatom species for biotechnology: <i>Ulnaria ulna</i> (Nitzsch) comparative case study
15:50–15:05	[O1.7] <b><u>Olga Samylina</u></b> (Winogradsky Institute of Microbiology RAS, Moscow, Russia), Sinetova M.P., Kupriyanova E.V. (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia) The importance of taxonomic revision of haloalkaliphilic cyanobacteria from soda lakes	[O4.7] <b><u>Nadezhda Chernova</u></b> , Kiseleva S.V., Zaytsev S.I., Nikitin M.A., Gaynanova O.Yu. (Lomonosov MSU, Moscow, Russia) Cyanobacteria (blue-green algae)—prospects as biofuels and co-products
15:05–16:20	[O1.8] <b><u>Alina Trofim</u></b> , Zosim L.S., Dobrojan S.N., Donțu N.R., Stratulat I.I., Semeniuc E.N. (State University of Moldova, Chisinau, Moldova) Importance and biochemical characteristics of some soil blue-green algae from Republic of Moldova	[O4.8] <b><u>Aleksander Tambiev</u></b> , Vasilieva S.G.. (Lomonosov MSU, Moscow, Russia), Sedykh I.M. (Vernadsky Institute of Geochemistry and Analytical Chemistry RAS, Moscow, Russia) The possibility of microelements accumulation by cyanobacteria of genus <i>Spirulina</i> , the objects of photobiotechnology
16:20–16:50	<i>Coffee-break</i>	
16:50–17:05	[O1.9] <b><u>Svetlana Nekhodimova</u></b> , Fomina N.V. (Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia) Cyanobacterial structure of forest nursery soils in Krasnoyarsk Krai region	[O4.9] <b><u>Natalia Nemtseva</u></b> (Institute for Cellular and Intracellular Symbiosis, Orenburg, Russia) Hydrobiocenosis as a model system of association symbiosis
17:05–17:20	[O1.10] <b><u>Bolatkhan Zayadan</u></b> , Baimakhanova G.B., Oraz G.D. (Al-Farabi Kazakh National University, Almaty, Kazakhstan), Sadanov A.K. (Institute of Microbiology and	[O4.10] <b><u>Natalia Kolotilova</u></b> (Lomonosov MSU, Moscow, Russia) On the history of the utilization of algae in the purification of water (on the occasion of the the 125 <sup>TH</sup>

	Virology, Almaty, Kazakhstan) Isolation of new cyanobacterial cultures and creation of consortiums on their basis	anniversary of the birth of E.E.Uspensky)
17:20–19:00	Poster Session	

Thursday, May 29	
10:05–11:50	Plenary Session 5. Chair <b>Elena Lobakova</b> (Lomonosov MSU, Moscow, Russia), <b>Katerina Tikhonova</b> (NIRC MSU, Moscow, Russia)
10:00–10:45	[I.9] <b>Andrei Rubin</b> (Lomonosov Moscow State University, Moscow, Russia) Regulation of primary processes of photosynthesis and environmental monitoring methods
10:45–11:15	[I.10] <b>Galina Belyakova</b> (Lomonosov Moscow State University, Moscow, Russia) The macrosystematics of biotechnologically significant microalgal species
11:15–11:45	[I.11] <b>Lev Tsoglin</b> (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia) Challenges of Microalgal Biotechnology Development
11:45–12:15	<i>Coffee-break</i>
12:15–13:30	Session 2.3 Chairs <b>Irina Elanskaya</b> , <b>Olga Gorelova</b> (Lomonosov MSU, Moscow, Russia)
12:15–12:30	[O2.6] <b>Maria Sinetova</b> , Kozlova A. Yu., Messineva E.M., Markelova A.G. (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia), Samylina O.S. (Winogradsky Institute of Microbiology, RAS, Moscow, Russia) Inclusions in cyanobacterial and microalgal cells accumulating in response to stressful conditions: ultrastructural studies
12:30–12:45	[O2.7] <b>Anastasia Shebanova</b> , Baulina O.I., Gorelova O.A., Lobakova E.S., Shaytan K.V. (Lomonosov MSU, Moscow, Russia) Analytical transmission electron microscopy investigation of the green microalga intravacuolar matter
12:45–13:00	[O2.8] <b>Ekaterina Lobanova</b> , Klokova K., Chekanov K.A., Solovchenko A.E., Lobakova E.S. (Lomonosov MSU, Moscow, Russia) Possibilities of cryopreservation of the carotenogenic microalga <i>Haematococcus pluvialis</i> Flotow (Chlorophyceae)



13:00–13:15	[O2.9] <b>Svetlana Zheleznova</b> , Gevorgiz R.G., Nehoroshev M.V. , Ryabushko V.I. (Kovalevsky Institute of Biology of the Southern Seas, Sevastopol, Russia) The influence of nitrogen concentration in nutrient medium on fucoxanthin accumulation in diatom <i>Cylindrotheca closterium</i> (Ehrenb.) Reimann et Lewin
13:15–13:30	[O2.10] <b>Katerina Solomonova</b> (Kovalevsky Institute of Biology of the Southern Seas, Sevastopol, Russia) Effect of the light on the enzymatic activity of the cells <i>Chlorella vulgaris</i> suboblunga and <i>Phaeodactylum tricornutum</i>
13:30–15:00	Lunch
15:00–15:30	Plenary Session 6. Chair <b>Alexei Solovchenko</b> (Russia)  [I.12] <b>Boris Zorin</b> , (Ben-Gurion University of the Negev, Israel) Omer Grundman, Olivier Vallon, Nicolas Tourasse, Stefan Leu, Inna Khozin-Goldberg, Sammy Boussiba. Domestication of wild-type algae, exemplified by the oleaginous snow alga <i>Parietochloris incisa</i>
15:30–16:30	Concluding Session. Young Scientist Awards Presentation

Friday, May 30	
10:00–16:00	Mark N. Merzlyak Young Scientist Workshop
10:00–11:00	<b>Elumalai Sanniyasi</b> (University of Madras, India) Molecular studies of carbon dioxide (CO <sub>2</sub> ) capture and sequestration by microalgae in India
11:00–12:00	<b>Boris Zorin</b> (Ben-Gurion University of the Negev, Israel) Irina Sizova, Peter Hegemann. Creation of an algal gene-targeting system and deletion of the <i>Chlamydomonas</i> nuclear gene PHOT by site directed gene targeting
12:00–13:00	<b>Dmitry Los</b> (Timiryazev Institute of Plant Physiology RAS, Russia) Cyanobacteria as the model system for research cell regulation processes and adaptation.
13:00–14:00	Lunch
14:00–15:00	<b>Anatoly Tsygankov</b> (IFPB RAS, Puschino, Russia) Harnessing hydrogen metabolism of oxygenic phototrophs
15:00–16:00	<b>Anastasia Stryomukhova</b> (NIRC MSU, Moscow, Russia) The Theory and Practice of Innovation Development on the Basis of Universities: the Experience of Centre of National Intellectual Reserve of Lomonosov Moscow State University.

### Poster program

Poster Session 1.	
P1.1	<b>Oksana Zhenavchuk</b> (Lomonosov MSU, Moscow, Russia), Beletskii A.V., Mardanov A.V. (Centre “Bioengineering” of RAS, Moscow, Russia), Mikheeva L.E. (Lomonosov MSU, Moscow, Russia) The study of genomic polymorphism in closely related strains of cyanobacteria <i>Anabaena variabilis</i>
P1.2	<b>Fariza Sarsekeyeva</b> , Usserbayeva A.A., Bolatkhan K. (Al-Farabi Kazakh National University, Almaty, Kazakhstan), Sinetova M. A., Los D.A. (Timiryazev Institute of Plant Physiology RAS, Moscow, Russia), Zayadan B.K. (Al-Farabi Kazakh National University, Almaty, Kazakhstan) Identification of the cyanobacteria <i>Synechococcus</i> – fatty acids producer allocated from the cold lake Issyk in the Republic of Kazakhstan
P1.3	<b>Christina Gheorghita</b> , Ungureanu L. (Institute of Zoology of the Academy of Sciences, Chisinau, Moldova) Isolation of diatom <i>Navicula cryptocephala</i> for application in biotechnology domain
Poster Session 2	
P2.1	<b>Galina Viniarska</b> , Bodnar O.I., Stanislavchuk A.V., Grubinko V.V. (Hnatiuk Ternopil National Pedagogical University, Ternopil, Ukraine) accumulation of selenium in lipids <i>Chlorella vulgaris</i> cells
P2.2	<b>Anastasia Volokitina</b> , Polyak Yu.M. (Scientific Research Centre for Ecological Safety, RAS, Saint-Petersburg, Russia), Sazanova K.V. ( Saint-Petersburg State University, Saint-Petersburg, Russia) Effect of oxidation-reduction conditions and aeration on cyanobacterium <i>Microcystis aeruginosa</i>
P2.3	<b>Elena Voronova</b> , Koksharova O.A., Pogosian S.I. (Lomonosov MSU, Moscow, Russia) Characteristic traits of the photosynthetic apparatus in the cells of the cell division-mutant cells of the cyanobacterium <i>Synechococcus</i> sp. PCC 7942
P2.4	<b>Tatiana Vlasova</b> (Lomonosov MSU, Moscow, Russia) Variations of chloroplast ultrastructure in green alga <i>Coccomyxa</i> , phycobiont of lichen <i>Peltigera aphthosa</i> , under different conditions
P2.5	<b>Olga Baulina</b> , Gorelova O.A. (Lomonosov MSU, Moscow, Russia) Ultrastructural plasticity of symbiotic chlorophyte <i>Desomdesmus</i> sp. 3Dp86E-1 capable of growth at elevated carbon dioxide levels under high light

P2.6	<b>Olga Gorelova</b> , Baulina O.I., Solovchenko A.E. (Lomonosov MSU, Moscow, Russia) Morphometric recording of ultrastructural rearrangements in the cells of nitrogen-starving <i>Desmodesmus</i> sp. 3Dp86E-1 cultivated under high light
Poster Session 3	
P3.1	<b>Ruben Aslanyan</b> Georgievskaya A.M., Chivkunova O.B., Chekanov K.A., Lobakova E.S. (Lomonosov MSU, Moscow, Russia) Screening of the algological collection for biotechnologically promising strains
P3.2	<b>Valentina Ipatova</b> (Lomonosov MSU, Moscow, Russia) Resistance of microalgae to colloidal silver
P3.3	<b>Alexandra Popova</b> (Institute of Molecular Genetics, RAS, Moscow, Russia), Koksharova O.A. (Lomonosov MSU, Moscow, Russia), Khmel I.A. (Institute of Molecular Genetics, RAS, Moscow, Russia) Analysis and mechanism of action of bacterial volatile organic compounds on phototrophic microorganisms
P3.4	<b>Dmitry Kiselevskii</b> , Samuilov V.D. (Lomonosov MSU, Moscow, Russia) Morphological features of <i>Anabaena variabilis</i> cell death induced by lincomycin, NaCl or Reactive oxygen species
P3.5	<b>Tatiana Kravtsova</b> , Ilyash L.V. (Lomonosov MSU, Moscow, Russia) Estimation of biomass of oxygen-evolving phototrophic microorganisms associated with the hydroid <i>Dynamena pumila</i> during the summer period
Poster Session 4	
P4.1	<b>Taku Misonou</b> , Naoya Gomi, Kceniya Fomichova (Graduate School of Medicine and Engineering, University of Yamanashi, Japan) Development of organic waste recycling system using microalgae
P4.2	<b>Svetlana Vasilieva</b> , Lobakova E.S., Solovchenko A.E., Lukyanov A.A. (Lomonosov MSU, Moscow, Russia), Dedov A.G. (Gubkin Russian State University of Oil and Gas, Moscow, Russia) New polymeric materials with incorporated plant structures for microalgae immobilization
P4.3	<b>Leila Aleskerova</b> , Mazhul M.M., Ismailov A.D. (Lomonosov MSU, Moscow, Russia) Biosensors based in the luminescent bacterium <i>Photobacterium phosphoreum</i> immobilized in the cryogel of polyvinyl alcohol
P4.4	<b>Yurii Perfilyev</b> , Dedushenko C.K., Kulikov L.A. (Lomonosov MSU, Moscow, Russia) Ferrate-based technology of water purification, its problems and promise

P4.5	<b><u>Yanina Savanina</u></b> , Barsky E.L., Burakova O.V., Fomina I.A., Korolev Yu.N. (Lomonosov MSU, Moscow, Russia) Dialysis culture of unicellular cyanobacteria as a model of biological system of the reservoir which is under the influence of environment factors
P4.6	<b><u>Yanina Savanina</u></b> , Barsky E.L., Koroleva S.Yu., Korolev Yu.N., Lobakova E.S. (Lomonosov MSU, Moscow, Russia) Interaction characteristic of phytoplanktonic community components as indicator of water ecosystems quality
P4.7	<b><u>Kapkov V.I.</u></b> , Malashenkov D.V. (Lomonosov MSU, Moscow, Russia) Ecological functions of cyanobacteria metabolites in aquatic ecosystems

### **Keynote Speaker Biographies**



#### **Mikhail P. Kirpichnikov**

Doctor of Biological Sciences (1987), Member of Russian Academy of Sciences (RAS, 1997), Professor, Head of Department of Bioengineering (2000), Faculty of Biology, Lomonosov Moscow State University (MSU). Head of Laboratory of Protein Bioengineering (2002), M.M. Shemyakin and Yu.A. Ovchinnikov Institute of Bioorganic Chemistry, RAS. Since 2006, Dean of Faculty of Biology, MSU.

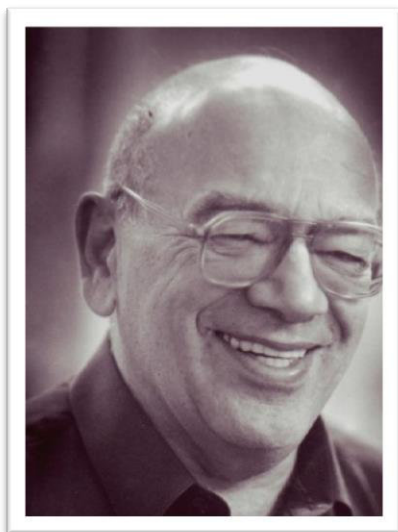
Graduated from Moscow Institute of Physics and Technology with major in molecular biophysics (1969). In 1972 graduated from PhD school of the

same university. For about 25 years worked at the Institute of Molecular Biology of USSR Academy of Sciences; then at Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry.

Mikhail Kirpichnikov is a major specialist in physico-chemical biology, protein engineering and biotechnology. He published over 400 papers cited in WebOfScience and has 20 patents.

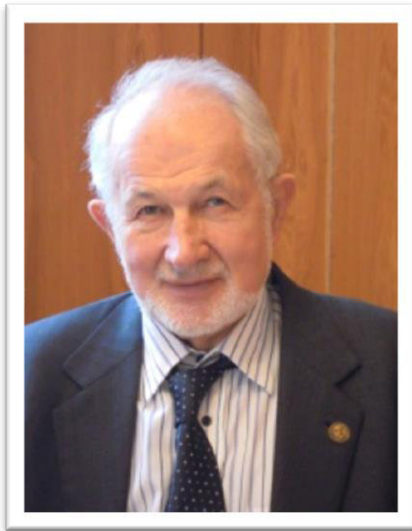
His group was first in the world to design and synthesize de novo of a completely new protein with predicted structure and function. For this work he was awarded State Prize of Russian Federation in 1999.

In 1989-2004 Mikhail P. Kirpichnikov occupied several public positions in parallel with his scientific and academic activities. He was Minister of Science and Technology of Russian Federation, Head of Department of Science of the Government Office of Russian Federation, First Deputy Minister of Industry, Science and Technology of Russian Federation.



### **Ilya I. Moiseev**

Ilya I. Moiseev is Professor of Inorganic Chemistry at the Gubkin State University of Oil and Gas (Moscow) and Master of Laboratory of Catalysis with Metal Complexes at the N.S.Kurnakov Institute of General and Inorganic Chemistry, RAS. He was born in Moscow in 1929. In 1947, Ilya Moiseev joined the M.V.Lomonosov Institute of Fine Chemical Technology (Moscow), where he studied chemistry with Professor Rafail Flid. In 1952, Moiseev received Diploma of chemical engineer, technology of bulk organic synthesis, from the Institute for his study on acetylene hydration reaction catalyzed by mercury salts. After the graduation he was obliged to serve as an engineer at a State Institution for Designing chemical enterprises for three years (1952-1955) He received Candidate Sc. Degree (an equivalent for PhD) from the M.V.Lomonosov Institute of Fine Chemical Technology in 1958 and the Doctoral Sc. Diploma from the N.S.Kurnakov Institute in 1967. Since 1955 Moiseev was with Professor Yakov Syrkin group, initially at the Institute of Physical Chemistry and later on at the N.S.Kurnakov Institute of General and Inorganic Chemistry, RAS. Here he pioneered studies on palladium chemistry. In 1974, Moiseev established laboratory of catalysis with metal complexes at the N.S.Kurnakov Institute and headed it for approximately thirty years. He is Vice-President of Russian Chemical Society, chairman of Scientific Council of Natural Gas Chemistry, RAS, Honorary Research Associate, A.V.Topchiev Institute of Petrochemical Synthesis, RAS, Honorary Professor of Moscow Institute of Fine Chemical Technology after M.V.Lomonosov, Russian D.Mendeleev University of Chemical Technology. Moiseev was elected as Corresponding Member, RAS, in 1990 and Full Member (Academician), RAS, in 1992. Ilya Moiseev is author or co-author of three monographs and more than 500 original research papers and reviews.



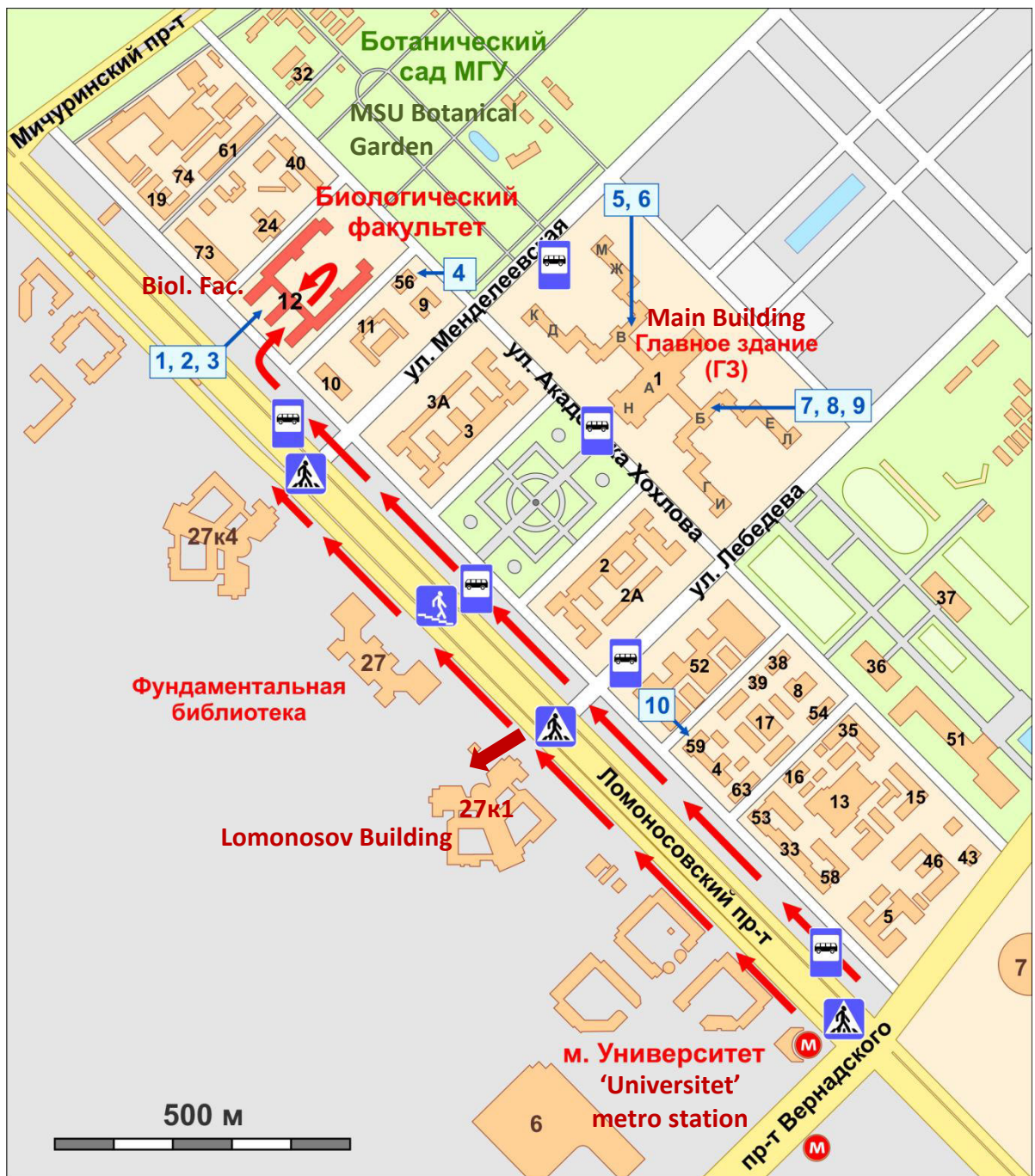
**Andrei B. Rubin**

Ph.D., professor and corresponding member of Russian Academy of Science (RAS), head of department of biophysics in faculty of biology of Lomonosov Moscow State University (MSU). He is the president of Science Council of RAS for “biological physics” problem, member of different science councils for “space biology” and “biological membranes” problems, member of science commission (created by order by chancellor of MSU).

Rubin A. is the expert in biophysics of photosynthesis, biophysics of membranes, electron transport’s kinetics and thermodynamics processes. He is the head of complex investigation of kinetics and galloping processes of energy transformation in photoenergy transferring biological membranes. Based on his theoretical and experimental investigations he formulated new quantitative stochastic theory of conformational mobility of biological macromolecular system: open of nature of structural dynamic organization and connection of molecular dynamic and function in membrane’s working.

Rubin A. is the author of fundamental three-volume edition of textbook “Biophysics” (Moscow, 2013). His works in biophysics of photosynthesis were awarded with State prize of USSR in 1988. He is also winner of Lomonosov prize for “Biophysics” textbook (1992) and Krasnovsky prize in photochemistry and photosynthesis (1996). Rubin’s contribution in biological education is appreciated not only in Russia but also in international level. Rubin A. is the author of more than 500 articles and 14 books.

**Local city and university map**



**Ленинские горы, д.1 (основные строения):**

- корп.1 — Главное здание (ГЗ)
- корп.53 — Поликлиника, аптека
- корп.12 — Биологический факультет и факультет Почвоведения
- Ломоносовский проспект, 27 корп. 1 — Ломоносовский корпус



### **How to get to the conference:**

#### **To Lomonosov building**

Take the subway till "Universitet" station. Get out at the end of the station by escalator. Now you can go straight to the building (just one bus stop) or use the public transport.

To go on foot turn left after you have left the subway and go forward till you see the Lomonosov Building on your left (it would be the first building after residential houses).

If you would prefer to take a bus you will need to cross the Lomonosov ave. after you have left the subway. The bus stop is located on the opposite side of the street and pedestrian crossing is just in few steps on the right from subway station. Take any bus or trolleybus and go out in the next station. Depend of bus number you might be need to cross Lomonosov ave. once again. The pedestrian crossing is just in front of bus stop. The Lomonosov building is located in the same side of the street as the subway station.

If you are using your car go straight in Lomonosov ave. till you will see the turn on the left near intersection between Lomonosov ave and Lebedev st. Next go to the Lomonosov Building till control post (closed area). Free and protected parking is provided for all conference's participants.

GPS coordinates: 55.696547 / 37.526457

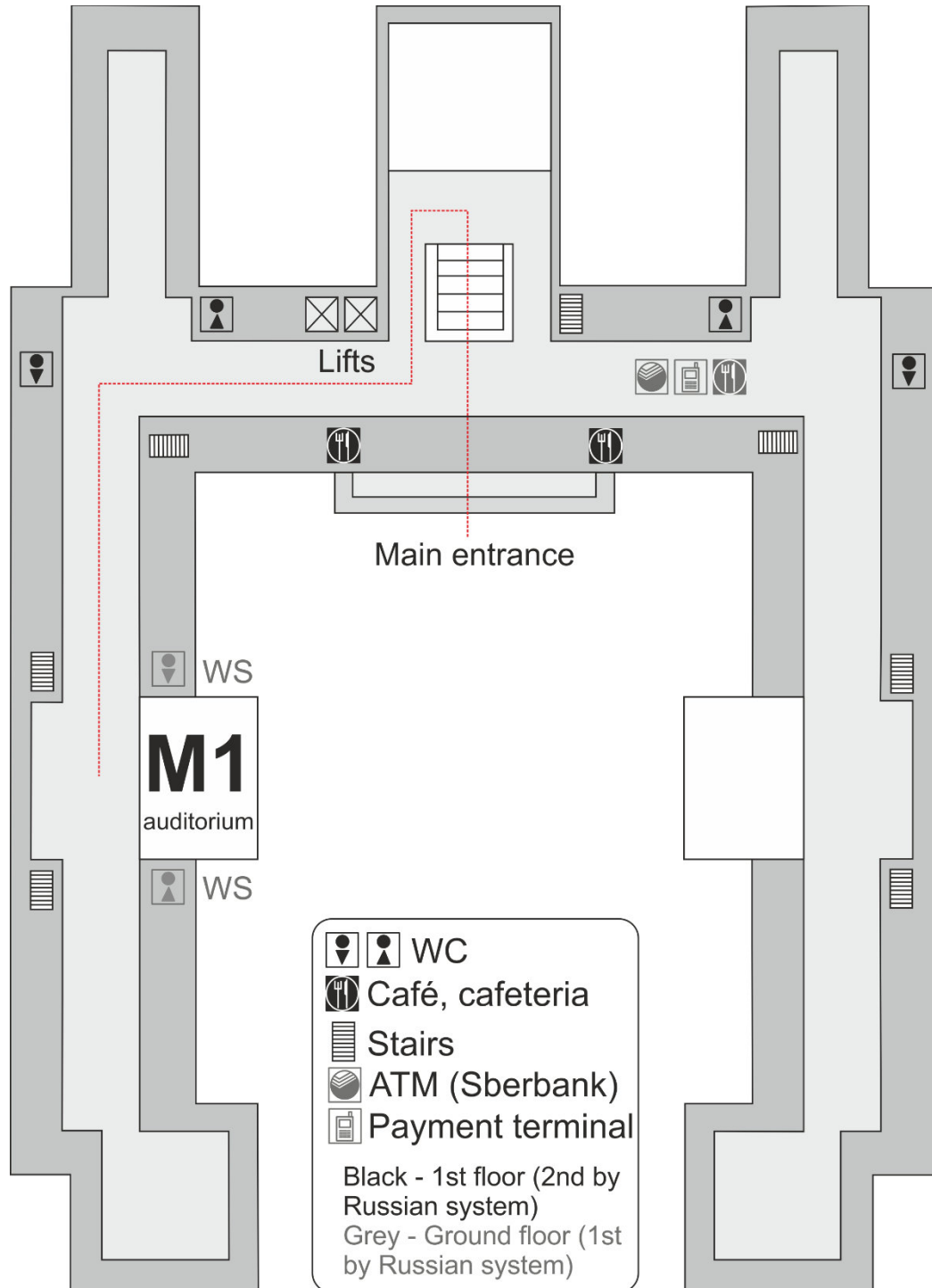
#### **To the Faculty of Biology:**

You will need to cross the Lomonosov ave. after you have left the subway. The bus stop is located on the opposite side of the street and pedestrian crossing is just in few steps on the right from subway station. Take bus №47, 67, 103, 113, 130, 187, 260 or trolleybus №34 and go out in third station ("Ulitsa Mendeleeva"). After you have left the bus go straight forward and cross Lomonosov ave (in the opposite side towards subway), continue forward along fence and Mendeleev st. till you see turn of your left blocked for cars, turn there and go forward till you see the arch blocked for cars by yellow gate on your right, go through the arch, turn left and you found yourself in front of entrance for the faculty.

If you are using your car, go straight in Lomonosov ave. till you will see the intersection between Lomonosov ave and Mendeleev st. Turn left on Mendeleev st. and continue till the intersection between Mendeleev st. and Akademik Khokhlov st. Turn left on Akademik Khokhlov st. and continue along the fence of botanical garden till you will see the second turn on the left. Turn there and continue until the parking place. You will be inside of court of the faculty. Left the car and go forward. Faculty's entrance is located just in the center of the building.

GPS coordinates: 55.704081 / 37.521213

## Plan of the Faculty of Biology



Faculty of Biology, Lomonosov Moscow State University  
 1/12, Leninskie Gori, Moscow, Russia



*International scientific conference*  
**Physiology and biotechnology of oxygenic  
 photoautotrophic microorganisms: looking into the future**

## **Мероприятия конференции**

Short conference summary in Russian (for English, see back cover)

<b>Понедельник, 26 мая</b>			
10:00–16:00	Регистрация участников		
	<b>Фойе биологического факультета МГУ</b>		
16:00	Экскурсия в Ботанический сад МГУ		
<b>Вторник, 27 мая</b>			
	<b>Аудитория В113, корпус «Ломоносов»</b>	15:35–16:20	Дневное заседание секций 3 и 4
10:00–10:05	Открытие конференции		<b>Аудитории М-1 (секция 3) и 557 (секция 4), биологический факультет</b>
10:05–11:50	Пленарная сессия	16:20–16:50	Кофе-брейк
11:50–12:15	Кофе-брейк	16:50–17:20	Вечернее заседание секций 2 и 4
12:15–13:30	Утреннее заседание секции 1		<b>Аудитории М-1 (секции 2 и 3, совместное) и 557 (секция 4), биологический факультет</b>
13:30–15:00	Обед	17:20–18:00	Стендовая сессия
15:00–15:30	Стендовая сессия		<b>Рекреация аудитории М1, биологический факультет</b>
	<b>Аудитория М-1, биологический факультет</b>	18:00	Вечер памяти профессора М.Н. Мерзляка <b>Аудитория 433, биологический факультет</b>
<b>Среда, 28 мая</b>			
10:00–11:45	Пленарная сессия	15:35–16:20	Дневное заседание секций 1 и 4
	<b>Аудитория М-1, биологический факультет</b>		<b>Аудитории М-1 (секция 1) и 557 (секция 4), биологический факультет</b>
11:45–12:15	Кофе-брейк	16:20–16:50	Кофе-брейк
12:15–13:30	Утреннее заседание секций 2 и 3 (совместное)	16:50–17:20	Вечернее заседание секций 1 и 4
	<b>Аудитория М-1, биологический факультет</b>		<b>Аудитории М-1 (секция 1) и 557 (секция 4), биологический факультет</b>
13:30–15:00	Обед	17:20–19:00	Постерная сессия
15:00–15:30	Пленарная сессия <b>Аудитория М-1, биологический факультет</b>		<b>Рекреация аудитории М-1, биологический факультет</b>
<b>Четверг, 29 мая</b>			
10:00–11:45	Пленарная сессия	15:00–15:30	Пленарная сессия
	<b>Аудитория М-1, биологический факультет</b>		<b>Аудитория М-1, биологический факультет</b>
11:45–12:15	Кофе-брейк	15:35–16:30	Заключительное заседание
11:45–13:30	Утреннее заседание секций 2 и 3 (совместное)		<b>Аудитория М-1, биологический факультет</b>
	<b>Аудитория М-1, биологический факультет</b>	19:00	Вечер памяти профессора М.В. Гусева
13:30–15:00	Обед		<b>Аудитория М-1, биологический факультет</b>
<b>Пятница, 30 мая</b>			
10:00–16:00	Школа молодых ученых имени проф. М.Н. Мерзляка		
	<b>Аудитория В145, корпус «Ломоносов»</b>		



## Conference schedule

<b>Monday, May 26</b>			
10:00–16:00	Delegate Registration		
	<b>Biological faculty, foyer</b>		
16:00	Sightseeing at the botanical garden of MSU		
<b>Tuesday, May 27</b>			
10:00–10:05	Conference opening	15:35–16:20	Afternoon sessions 3 and 4
	<b>Auditorium B113, Lomonosov Building</b>		<b>Auditorium M-1 (session 3) and 557 (session 4), Biological Faculty</b>
10:05–11:50	Plenary session	16:20–16:50	Coffee break
11:50–12:15	Coffee break	16:50–17:20	Evening sessions 2,3 (combined) and 4
12:15–13:30	Morning session 1		<b>Auditorium M-1 (sessions 2, 3) and 557 (session 4), Biological Faculty</b>
13:30–15:00	Lunch	17:20–18:00	Poster session
15:00–15:30	Plenary session		<b>Auditorium M-1 (recreation hall), Biological Faculty</b>
	<b>Auditorium M-1, Biological Faculty</b>	18:00	Evening meeting dedicated to the memory of Professor Mark Merzlyak
			<b>Auditorium 433, Biological Faculty</b>
<b>Wednesday, May 28</b>			
10:00–11:45	Plenary session	15:35–16:20	Afternoon sessions 1 and 4
	<b>Auditorium M-1, Biological Faculty</b>		<b>Auditorium M-1 (session 1) and 557 (session 4), Biological Faculty</b>
11:45–12:15	Coffee break	16:20–16:50	Coffee break
12:15–13:30	Morning sessions 2 and 3 (combined)	16:50–17:20	Evening sections 1 and 4
	<b>Auditorium M-1, Biological Faculty</b>		<b>Auditorium M-1 (session 1) and 557 (session 4), Biological Faculty</b>
13:30–15:00	Lunch	17:20–19:00	Poster session
15:00–15:30	Plenary session		<b>Auditorium M-1 (recreation hall), Biological Faculty</b>
	<b>Auditorium M-1, Biological Faculty</b>		
<b>Thursday, May 29</b>			
10:00–11:45	Plenary session	15:00–15:30	Plenary session
	<b>Auditorium M-1, Biological Faculty</b>		<b>Auditorium M-1, Biological Faculty</b>
11:45–12:15	Coffee break	15:35–16:30	Concluding session, Young Scientist Awards presentation
11:45–13:30	Morning sessions 2 and 3 (combined)		<b>Auditorium M-1, Biological Faculty</b>
	<b>Auditorium M-1, Biological Faculty</b>	17:00	Memorial Evening of Professor Mikhail Gusev
13:30–15:00	Lunch		<b>Auditorium M-1, Biological Faculty</b>
<b>Friday, May 30</b>			
10:00–16:00	Mark N. Merzlyak Young Scientist Workshop		
	<b>Auditorium B145, Lomonosov Building</b>		