



SHENZHEN MSU-BIT UNIVERSITY

深圳北理莫斯科大学



School of Biology

生物系



# Contents

Welcome	03
What to Study?	06
Career Prospects	07
Nanobiotechnology Program in MSU	10
Nanobiotechnology Program Structure	11
Nanobiotechnology Research Facilities	12
General Ecology Program in MSU	15
General Ecology Program Structure	16
General Ecology Fieldwork and Expeditions	18
General Ecology Research Subject Groups	19
Choose Shenzhen	22
Student Experience and Campus Information	24
Entry Requirements	25
Useful Contacts	26

# LOMONOSOV MOSCOW STATE UNIVERSITY

## CO-FOUNDER OF THE JOINT UNIVERSITY

Founded in  
**1755**

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Structure:

15 research institutes



43 faculties  
more than 300 departments  
6 branches in other cities and countries

600 buildings and

**1000000**

sq. meters – the area

Dedicated Supercomputer  
ranking **#22** in the World

---

More info: <http://www.msu.ru/en/>

**38150**  
current students  
number and  
**10%** are  
foreign students

---



**10784** - number of  
teaching and research  
staff

---

**#30** in THE  
World  
Reputation  
Rankings

# BEIJING INSTITUTE OF TECHNOLOGY

## CO-FOUNDER OF THE JOINT UNIVERSITY

Founded in  
**1940**

Structure:

- 4 faculties
- 19 colleges



**60**

the number of international universities BIT has student-exchange agreements with

**#81** BRICS & Emerging Economies 2017 ranking

More info: <http://english.bit.edu.cn/>

**> 25000**

the number of full-time students

**> 3500**

faculty members

**3** campuses



**3000000**

sq. meters — the area

Library area:

**46000** sq. meters

# LOMONOSOV MOSCOW STATE UNIVERSITY

## SCHOOL OF BIOLOGY

The School of Biology at Lomonosov Moscow State University (MSU) is one of the biggest divisions of MSU and the leading center for biological education at the levels of Bachelor's, Master's and Doctoral degrees. The teaching personnel of the School of Biology encompasses more than 100 full professors, 140 associate and assistant professors, more than 700 researchers, who maintain the training process. Students can choose specialization in a number of fields, including fundamental biological disciplines, biotechnological profile and nanoscience.

More than 75% of graduates get employed in pure science and education, science-related industries, such as R&D in pharmacology, food technology and agriculture, farming and aquaculture, scientific instruments, information technology, etc. More than a half of graduates choose to continue their scientific work as PhD students in Russia or abroad and eventually receive the doctoral degree.

Many alumni of the School of Biology achieved the outstanding results in science, business and in the public sphere. There are prominent scientists, members of a number of scientific academies and societies in Russia, Europe, the USA and other countries, winners of the State Price of the Russian Federation, well-known journalists and writers, successful businessmen.



# WHAT TO STUDY?

## Nanobiotechnology

Nanobiotechnology is a new field at the intersection of biology and nanotechnology. Progress of our knowledge about the molecular mechanisms that underlie life allows specialists to design and create novel bioinspired materials and devices, develop medicines, manipulate living organisms in order to impart to them the desired properties, etc.

Those who want to become such specialists should build a strong expertise both in fundamental theory and high-impact know-hows.

Our Nanobiotechnology program offers wide education in molecular biology, bioinformatics, biophysical chemistry and related fields as well as practical experience of working with the most modern tools and techniques.

## Ecology

Ecologists investigate the relationships between organisms and their environment. As a master's student you will study how nature works. Both an aim in itself and to develop the tools to predict and combat problems caused by pollution, biodiversity loss and climate change. You will study Ecology from a plant, animal and systems perspective. Ecological processes are investigated from the molecular level on to the regional and global scale, where field observations and experiments are used to identify ecosystems' patterns and functions.

**The multidisciplinary fashion of the both Programs let students to specialize in a particular theoretical or practical area according to their interests, which they further master during work on the thesis under an individual supervision.**

# CAREER PROSPECTS

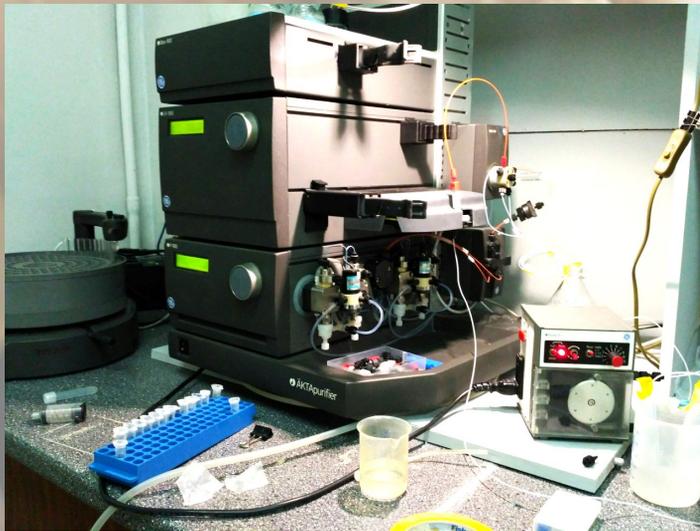
## Nanobiotechnology

The Program offers training, which will be appropriate for a successful career in academia, government and the most modern fields of industry, including Research & Development in pharmacology, food technology and agriculture, farming and aquaculture, scientific instruments, information technology, etc.

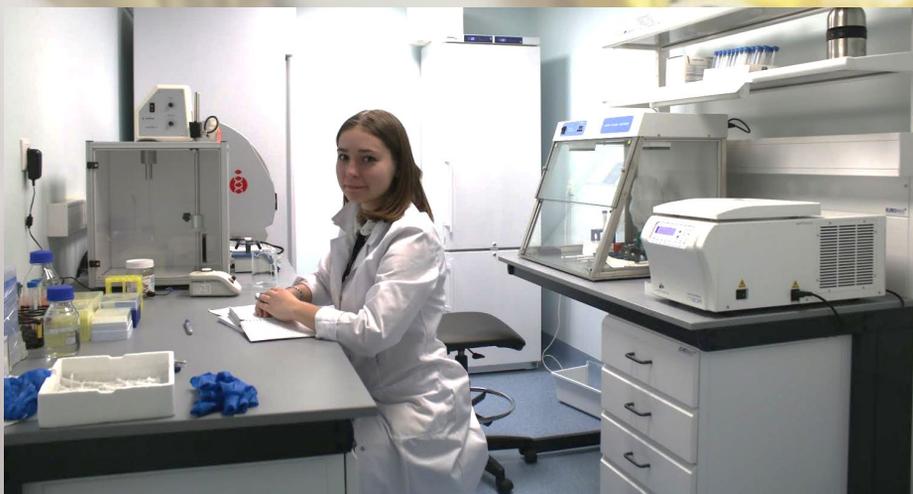
## Ecology

The Program offers training, which will be appropriate for a successful career in academia, governmental and nongovernmental organizations involved in nature conservation, environmental risk assessment, or biological control and integrated management.





A truly unique feature of Lomonosov Moscow State University is the fruitful coupling between the great traditions of the higher education in Russia, which stood the test of time and are well respected around the world, and the most modern and actual trends in science and education. It makes MSU brand No. 1 in the higher education in the Post-Soviet Space.



The principal hallmarks of the education include fundamental and very broad training in the basic biological disciplines, other natural sciences and math, which goes alongside with the hands-on training aiming at development of the modern investigative skills.



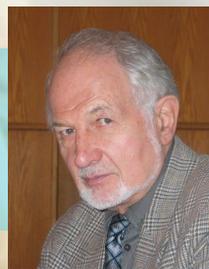
A key advantage of the educational process is its concentration around the scientific work. Students from the very beginning start working on their own scientific projects under supervision of the academic staff. The tutors do not solely realize the educational program but also curate the scientific projects of students cultivating in them such skills as critical thinking and analysis of the scientific information, oral and written presentation of results.



# NANOBIOTECHNOLOGY PROGRAM IN MSU



Prof. Mikhail P. Kirpichnikov,  
Head of Bioengineering  
department, Head of Biology  
School, Full Member of the  
Russian Academy of Sciences



Prof. Andrey B. Rubin,  
Head of Biophysics department,  
Corresponding Member of the  
Russian Academy of Sciences



Prof. Konstantin V. Shaitan,  
Deputy Head of Bioengineering  
department,  
Head of Molecular modeling  
laboratory



Prof. Alexey V. Feofanov  
Head of laboratory of Optical  
microscopy and spectroscopy of  
biomolecules



Prof. Olga S. Sokolova  
Head of Structural biotechnology  
laboratory



Prof. Georgii V. Maksimov  
Head of Cell biophysics laboratory

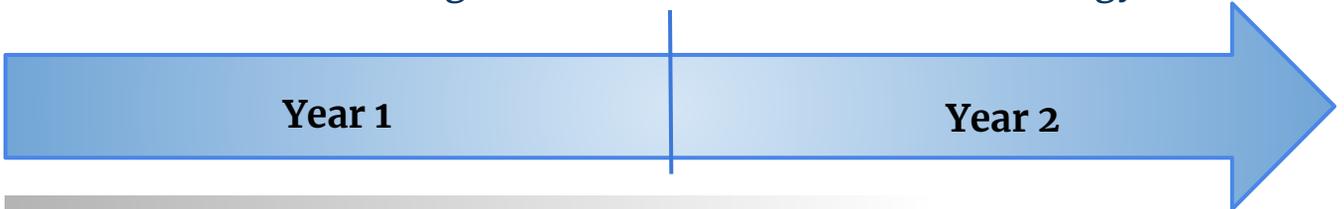
## Nanobiotechnology program in numbers:

- > 10 research groups and laboratories
- > 15 professors
- > 30 research fellows and PhD students
- > 20 special courses
- > 20 big practical works
- > 50 research papers a year

More info: <https://www.bioeng.ru/en/33-2/>

# PROGRAM STRUCTURE

## Two Year Program of Master in Nanobiotechnology



Theoretical courses

Practical courses

Diploma work

### Theoretical Courses:

- Structural and functional proteomics
- NMR and molecular structure investigation
- Physics of proteins and nucleic acid
- Molecular modeling and molecular dynamics
- Molecular changes in hemoglobin and Structure and Functional of the channel proteins
- Raman spectroscopy
- Nanotechnology for alternative energy sources
- Electron paramagnetic resonance in biology
- Nanobiosensors
- Molecular mechanisms of cell antioxidation

### Basic Practical Courses:

- Basics of cell lines cultivation, cell cultivation on microcarriers
- Basics of optical microscopy
- Basics of optical microscopy: photometry and video microscopy
- Wide-field optical microscopy
- Basics of confocal microscopy
- Protein purification by liquid chromatography
- Growing a Microbial Culture
- DNA amplification with PCR and DNA electrophoresis
- Protein electrophoresis
- Assessment of the effect of inhibitors on photosynthetic objects using optical methods
- Protein sequence search, alignments, De novo structure prediction of proteins, membrane proteins, disordered proteins

RESEARCH  
FACILITIES

## Molecular Modeling in Nanobiotechnology: Applications (Starts in 2017)

Drug Design: drug development and repurposing, structure and ligand based, chemoinformatics and small molecule properties predictions

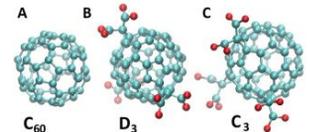
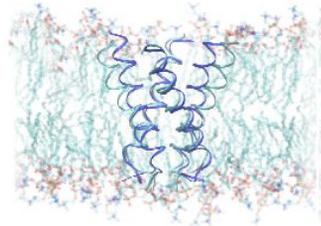
American Journal of Biochemistry and Biotechnology

Original Research Paper

### Docking and Molecular Dynamics Simulations in Potential Drugs Discovery: An Application to Influenza Virus M2 Protein

<sup>1,4,5</sup>Marine E. Bozdaganyan, <sup>2</sup>Philipp S. Orekhov, <sup>3,4,5</sup>Nicola L. Bragazzi, <sup>3</sup>Donatella Panatto, <sup>3</sup>Daniela Amicizia, <sup>4,5</sup>Eugenia Pechkova, <sup>4,5</sup>Claudio Nicolini and <sup>3</sup>Roberto Gasparini

<sup>1</sup>Biological Faculty, Lomonosov Moscow State University (MSU), Leninskie gory 1, Moscow 119234, Russia  
<sup>2</sup>Department of Physics, University of Duisburg-Essen, Fachbereich 7, Campus Essen 47076, Germany



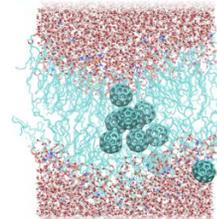
OPEN ACCESS Freely available online

PLOS ONE

### Comparative Computational Study of Interaction of C<sub>60</sub>-Fullerene and Tris-Malonyl-C<sub>60</sub>-Fullerene Isomers with Lipid Bilayer: Relation to Their Antioxidant Effect

Marine E. Bozdaganyan, Philipp S. Orekhov, Alexey K. Shaytan, Konstantin V. Shaitan\*

Biological department, M.V. Lomonosov Moscow State University, Moscow, Russia



Polymer properties predictions: applications to transplantology and bioengineering



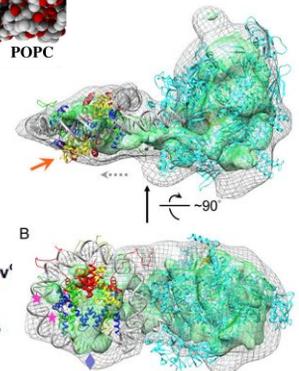
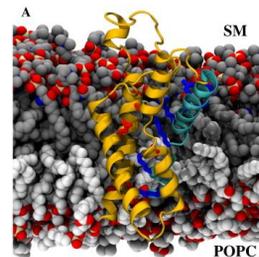
Biochimica et Biophysica Acta (BBA) -  
Biomembranes

Volume 1838, Issue 5, May 2014, Pages 1322–1331



Voltage-gated ion channel modulation by lipids: Insights from molecular dynamics simulations

Marina A. Kasimova<sup>a, b</sup>, Mounir Tarek<sup>a, c</sup>, Alexey K. Shaytan<sup>b</sup>, Konstantin V. Shaitan<sup>b</sup>, Lucie Delemotte<sup>d</sup>

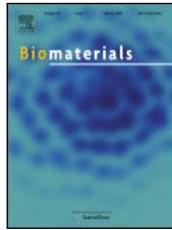


### Structural analysis of nucleosomal barrier to transcription

Daria A. Gaykalova<sup>a,1,2</sup>, Olga I. Kulaeva<sup>b,2</sup>, Olesya Volokh<sup>c,2</sup>, Alexey K. Shaytan<sup>c</sup>, Fu-Kai Hsieh<sup>a</sup>, Mikhail P. Kirpichnikov<sup>d</sup>, Olga S. Sokolova<sup>c</sup>, and Vasily M. Studitsky<sup>a,b,c,3</sup>

<sup>a</sup>Department of Pharmacology, Rutgers University School of Medicine, Piscataway, NJ 08854; <sup>b</sup>Cancer Epigenetics Program, Fox Chase Cancer Center, Philadelphia, PA 19111; and <sup>c</sup>Biology Faculty, Lomonosov Moscow State University, Moscow, Russia 119991

Edited by Gary Felsenfeld, National Institutes of Health, Bethesda, MD, and approved September 14, 2015 (received for review April 28, 2015)



# RESEARCH FACILITIES

PNAS

 BBA  
Biophysical Journal

## Molecular Modeling in Nanobiotechnology: Applications (Starts in 2017)

Polymer properties predictions: applications to transplantology and bioengineering

### Self-Assembling Nanofibers from Thiophene–Peptide Diblock Oligomers: A Combined Experimental and Computer Simulations Study

Alexey K. Shaytan<sup>†\*</sup>, Eva-Kathrin Schillinger<sup>‡\*</sup>, Pavel G. Khalatur<sup>†,‡</sup>, Elena Mena-Osteritz<sup>§</sup>, Jens

Hentschel<sup>¶</sup>, Hans G. Börner<sup>¶</sup>, Peter Bäuerle<sup>§</sup>, and Alexei R. Khokhlov<sup>†#</sup>

Institute of Polymer Science, University of Ulm, Albert-Einstein-Allee 47, D-89069 Ulm, Germany

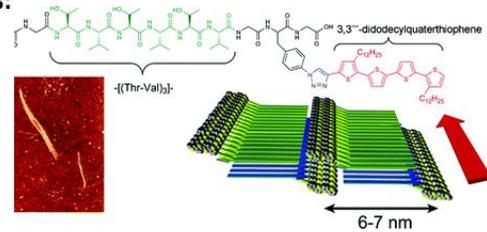
Faculty of Biology, Moscow State University, 119991 Moscow, Russia

Institute of Organic Chemistry II and Advanced Materials, University of Ulm, Albert-Einstein-Allee 11, D-89081 Ulm, Germany

Institute of Organoelement Compounds, Russian Academy of Science, 119991 Moscow, Russia

Department of Chemistry, Humboldt-Universität zu Berlin, Brook-Taylor-Strasse 2, D-12489 Berlin, Germany

Faculty of Physics, Moscow State University, 119991 Moscow, Russia.



## Nanobiotechnology: Applications (Starts in 2018–2019)

### Biomaterials



Biomaterials

Volume 33, Issue 15, May 2012, Pages 3887–3898



Tissue regeneration *in vivo* within recombinant spideroin 1 scaffolds

Mikhail M. Moisenovich<sup>a</sup>, Olga Pustovalova<sup>a</sup>, Julia Shackelford<sup>b</sup>, Tamara V. Vasiljeva<sup>c</sup>, Tatiana V. Druzhinina<sup>a</sup>, Yana A. Kamenchuk<sup>a</sup>, Vitaly V. Guzeev<sup>a</sup>, Olga S. Sokolova<sup>a</sup>, Vladimir G. Bogush<sup>d</sup>, Vladimir G. Debabov<sup>d</sup>, Mikhail P. Kirpichnikov<sup>a</sup>, Igor I. Agapov<sup>e,\*,✉</sup>

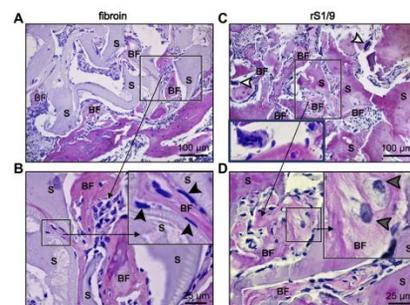


### Liver Tissue Decellularization as a Promising Porous Scaffold Processing Technology for Tissue Engineering and Regenerative Medicine

DOI: 10.17691/stm2015.7.4.01  
Received March 20, 2015

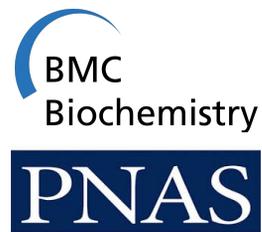
M.M. Bobrova, Clinical Research Assistant;  
L.A. Safonova, Clinical Research Assistant;  
O.I. Agapova, Researcher, Bionanotechnology Laboratory;  
M.E. Krasheninnikov, PhD, Senior Researcher, Cellular Technology Laboratory;  
M.Yu. Shagidulin, MD, PhD, Head of the Department of Experimental Transplantology and Artificial Organs;  
I.I. Agapov, DSc, Professor, Head of Bionanotechnology Laboratory

Academician V.I. Shumakov Federal Research Center of Transplantology and Artificial Organs,  
Ministry of Health of the Russian Federation, 1 Stchukinskaya St., Moscow, 123182, Russian Federation



# RESEARCH FACILITIES

RSC Advances



Biophysical Journal

## Nanobiotechnology: Applications (Starts in 2018-2019)

### Biophysics and Bioimaging

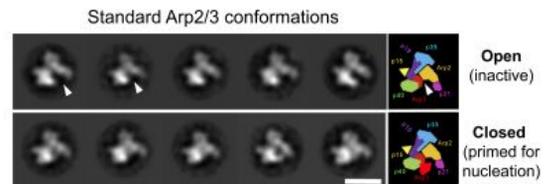
#### Structural Basis of Arp2/3 Complex Inhibition by GMF, Coronin, and Arpin

Olga S. Sokolova<sup>1</sup>, Angelina Chemeris<sup>1,5</sup>, Siyang Guo<sup>2</sup>, Salvatore L. Alioto<sup>2</sup>, Meghal Gandhi<sup>2</sup>, Shae Padrick<sup>3</sup>, Evgeniya Pechnikova<sup>4</sup>, Violaine David<sup>5</sup>, Alexis Gautreau<sup>6</sup>, Bruce L. Goode<sup>2</sup>

Show more

<https://doi.org/10.1016/j.jmb.2016.11.030>

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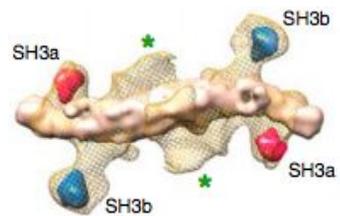
PNAS

#### Coordinated autoinhibition of F-BAR domain membrane binding and WASp activation by Nervous Wreck

Tatiana B. Stanishneva-Konovalova<sup>a,1</sup>, Charlotte F. Kelley<sup>b,1</sup>, Tania L. Eskin<sup>b</sup>, Emily M. Messelaar<sup>b</sup>, Steven A. Wasserman<sup>b</sup>, Olga S. Sokolova<sup>a,2</sup>, and Avital A. Rodal<sup>b,2</sup>

<sup>a</sup>Department of Bioengineering, Faculty of Biology, M.V. Lomonosov Moscow State University, 119234 Moscow, Russia; and <sup>b</sup>Rosenstiel Basic Medical Sciences Research Center, Department of Biology, Brandeis University, Waltham, MA 02453

Edited by Gregory A. Petsko, Weill Cornell Medical College, New York, NY, and approved July 25, 2016 (received for review December 10, 2015)



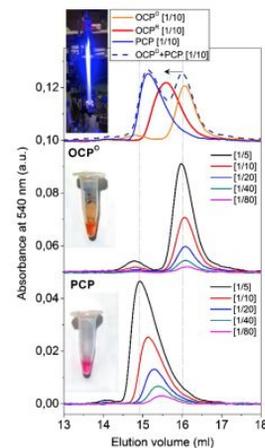
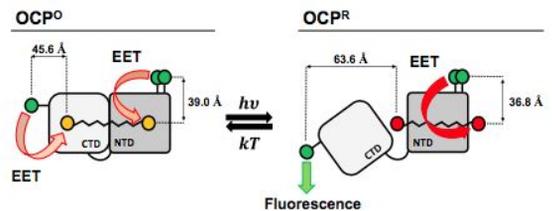
Biophysical Journal Article

Biophysical Society

#### Fluorescent Labeling Preserving OCP Photoactivity Reveals Its Reorganization during the Photocycle

Eugene G. Maksimov<sup>1,\*</sup>, Nikolai N. Sluchanko<sup>2</sup>, Kirill S. Mironov<sup>3</sup>, Evgeny A. Shirshin<sup>4</sup>, Konstantin E. Klementiev<sup>1</sup>, Georgy V. Tsoraev<sup>1</sup>, Marcus Moldenhauer<sup>5</sup>, Thomas Friedrich<sup>5</sup>, Dmitry A. Los<sup>5</sup>, Suleyman I. Allakhverdiev<sup>2,6,7</sup>, Vladimir Z. Paschenko<sup>1</sup>, and Andrei B. Rubin<sup>1</sup>

<sup>1</sup>Department of Biophysics, Lomonosov Moscow State University, Moscow, Russia; <sup>2</sup>Laboratory of Structural Biochemistry of Proteins, A. N. Bach Institute of Biochemistry, Research Center of Biotechnology of the Russian Academy of Sciences, Moscow, Russia; <sup>3</sup>Laboratory of Cell Regulation, K. A. Timiryazev Institute of Plant Physiology, Russian Academy of Sciences, Moscow, Russia; <sup>4</sup>Institute of Chemistry, Technical University of Berlin, Berlin, Germany; <sup>5</sup>Department of Intracellular Regulation, Institute of Plant Physiology, Moscow, Russia; and <sup>6</sup>Institute of Basic Biological Problems, Russian Academy of Sciences, Moscow, Russia



#### A comparative study of three signaling forms of the orange carotenoid protein

E. G. Maksimov<sup>1</sup> · M. Moldenhauer<sup>2</sup> · E. A. Shirshin<sup>3</sup> · E. A. Parshina<sup>1</sup> · N. N. Sluchanko<sup>4</sup> · K. E. Klementiev<sup>1</sup> · G. V. Tsoraev<sup>1</sup> · N. N. Tavrast<sup>2</sup> · M. Willoweit<sup>2</sup> · F.-J. Schmitt<sup>2</sup> · J. Breitenbach<sup>5</sup> · G. Sandmann<sup>5</sup> · V. Z. Paschenko<sup>1</sup> · T. Friedrich<sup>2</sup> · A. B. Rubin<sup>1</sup>

# GENERAL ECOLOGY PROGRAM IN MSU



**Prof. Mikhail P. Kirpichnikov,**  
Head of Bioengineering department, Head of Biology School,  
Full Member of the Russian Academy of Sciences

**Prof. Dmitriy G. Zamolodchikov**  
Chair of the General Ecology Department

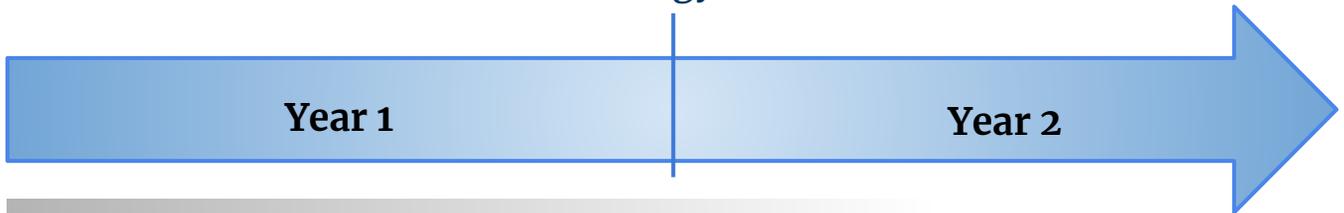


## General Ecology program :

- ~ 26 Research Fellows and Technicians
- > 5 PhD Students per year
- > 30 articles in the Top-25 Journals
- Fieldwork all over the world

# PROGRAM STRUCTURE

Two Year Programme of Master in Fundamental and systems  
ecology



Theoretical courses

Practical courses

Diploma work

The programme consists of 4 semesters (two years) including the M.Sc. - thesis.

**The 1st term starts with ecological basics:** the main concepts of ecology are covered and also experimental design and data analysis, earth sciences, molecular ecology and an introduction to current topics in cutting edge ecology.

**Specialization** is offered with a courses during the 2nd and 3rd semester, including population, marine ecology, as well as conservation biology, risk assessment, ecological modelling, environmental risk assessment and management as well as practice biology including field and lab works.

The **master's thesis** is conducted during the 4th semester, either SHENZHEN MSU-BIT UNIVERSITY or Lomonosov MSU, depending on the student's interests and topics.

The master of ecology will provide you with a broad ecological background and will train you to become a critically thinking scientist.

The acquired scientific, technical and communication skills also open a wide array of additional opportunities. During the program, you will become familiar with many techniques and approaches including field experiments, analysis of plant and animal behavior, mathematical modelling, sustainability research, advanced statistics, and modern molecular methods.

# COURSE, LAB WORK AND RESEARCH FACILITIES

## Compulsory courses:

- Biodiversity and its conservation
- Population ecology
- Biopolitics
- Urban ecology
- Statistical methods in ecology
- Simulation models in ecology
- Global and regional legislative tools of environmental conservation
- GIS and remote sensing applications in ecology

A major element of our study program is the research project. It allows the student to work on a current topic in an ecological sub-area of choice.

The project is conducted mostly in independent group work, skillfully guided by a supervisor. In this way, the students gain basic experience in the planning, execution, analysis and written description of a research project.

## Laboratories:

- Microscopy
- Universal analytical and biochemical lab
- Culture block for prokaryotes
- Aquariums
- Plant cells culture block
- Animal cells culture block

## Elective courses

Students will be allowed to take a broad selection of courses across departments and disciplines, you can choose to dive deep into a specific area of specialization.



# FIELDWORK AND EXPEDITIONS

**Dynamics of freshwater ecosystems**



**Boreal forest photosynthetic dynamics**



**Coral reefs in the South China Sea**



**53rd Russian Antarctic Expedition**



**Carbon cycle in northern ecosystem**

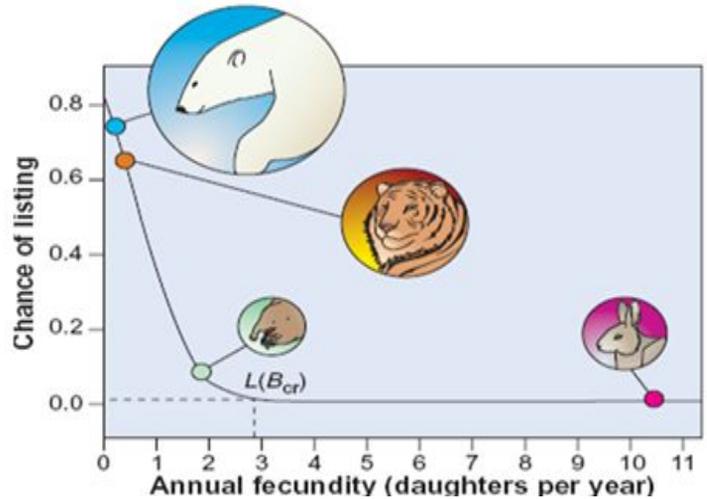


**White Sea Biological Station**

# RESEARCH SUBJECT GROUPS

## The Ecology, Evolution and Biodiversity: Why populations fluctuate and species go extinct?

Prof. Leonard V. Polishchuk



Oikos 124: 983–993, 2015  
doi: 10.1111/oik.01734

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Subject Editor: Richard Stevens. Editor-in-Chief: Dries Bonte. Accepted 2 November 2014

### A genetic component of extinction risk in mammals

Leonard V. Polishchuk, Konstantin Y. Popadin, Maria A. Baranova and Aleksey S. Kondrashov

### Photosynthetic carbon dioxide exchange and forest ecosystem productivity.

Prof. Akhmed K. Yuzbekov



# RESEARCH SUBJECT GROUPS

The human organism and its symbionts: interactivity: within the microecological system

Prof. Alexander V. Oleskin



Mini Review

Volume 2 Issue 4 – March 2017  
DOI: 10.19080/AIBM.2017.02.555594

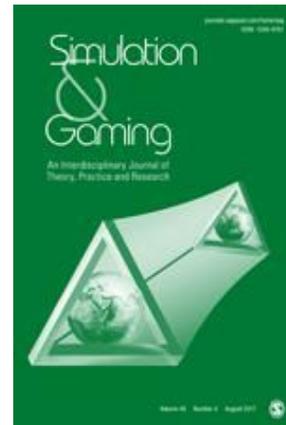
Adv Biotech & Micro

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## Biotechnology and Microbial Neurochemistry: Biotechnological Implications of the Role of Neuromediators in Microbial Systems



Alexander Vladimirovich Oleskin<sup>1\*</sup>, Olga Gennadiyevna Zhilenkova<sup>2</sup> and Ilya Romanovich Vodolazov<sup>1</sup>



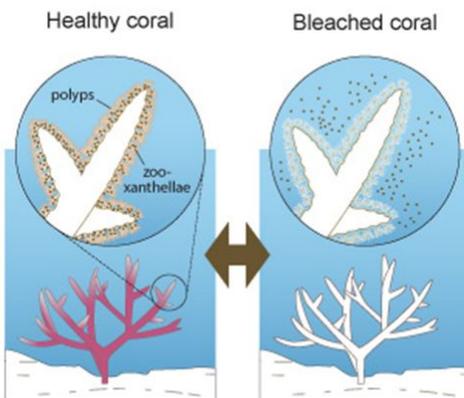
## Simulation Models and Business Games in Environmental Management and Design

Prof. Dmitry Kavtaradze

# RESEARCH SUBJECT GROUPS

## Coral reefs and trends in ocean ecosystem

Prof. Andrey Smurov



[Russian Journal of Marine Biology](#)

January 2004, Volume 30, [Issue 1](#), pp 43–50 | [Cite as](#)

Present-Day State of Coral Reefs of Nha Trang Bay (Southern Vietnam) and Possible Reasons for the Disturbance of Habitats of Scleractinian Corals

Authors

Authors and affiliations

D. S. Pavlov, A. V. Smurov, L. V. Il'yash, D. N. Matorin, N. A. Kluyev, S. V. Kotelevtsev, V. S. Rumak, T. G. Smurova

**Urban ecology:  
basics, research,  
monitoring and  
urban systems  
risk modeling**



Prof. Dmitry N. Kavtaradze Dr. Elena Yu. Likhacheva

## Environmental toxicology & chemistry and risk assessment

Prof. Andrey Smurov  
Dr. Artem Poromov



**Technology for Restoring and Maintaining Sustainability of Populations:  
Practical and Theoretical Results of Genourbanology**

*The Open Conference Proceedings Journal*, 2015, 6: 1-9

V. M. Makeeva, A. V. Smurov, D. V. Politov, M. M. Belokon, Y. S. Belokon, E. G. Suslova, A. A. Kalinin

Museum of Earth Sciences, Lomonosov Moscow State University, Leninskiye Gory 1, Moscow, 119991, Russia.

Electronic publication date 05/1/2015  
[DOI: [10.2174/2210289201506010001](https://doi.org/10.2174/2210289201506010001)]



# RESEARCH SUBJECT GROUPS

## Ecology and diversity of eukaryotic microbes

Prof. Yuri Mazei



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

European Journal of Protistology 51 (2015) 42–54

European Journal of  
PROTISTOLOGY

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### Additive partitioning of testate amoeba species diversity across habitat hierarchy within the pristine southern taiga landscape (Pechora-Ilych Biosphere Reserve, Russia)

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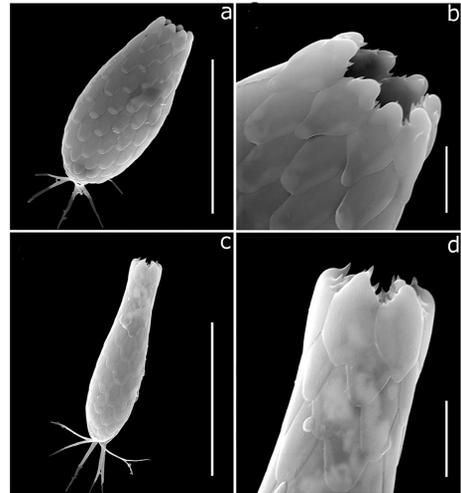
Theor Appl Climatol (2016) 125:439–447  
DOI 10.1007/s00704-015-1520-0

ORIGINAL PAPER

### Climate scaling behaviour in the dynamics of the marine interstitial ciliate community

Costas A. Varotsos<sup>1</sup> · Yuri A. Mazei<sup>2</sup> · Igor Burkovskiy<sup>3</sup> · Maria N. Efsthathiou<sup>1</sup> · Chris G. Tzanis<sup>1</sup>

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### What is the optimum sample size for the study of peatland testate amoeba assemblages?

Yuri A. Mazei<sup>a,b</sup>, Andrey N. Tsyganov<sup>a</sup>, Anton S. Esaulov<sup>a</sup>, Alexander Yu. Tyehkov<sup>a</sup>, Richard J. Payne<sup>a,c,\*</sup>

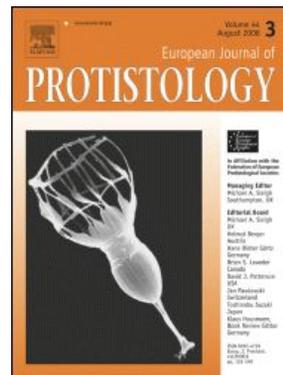
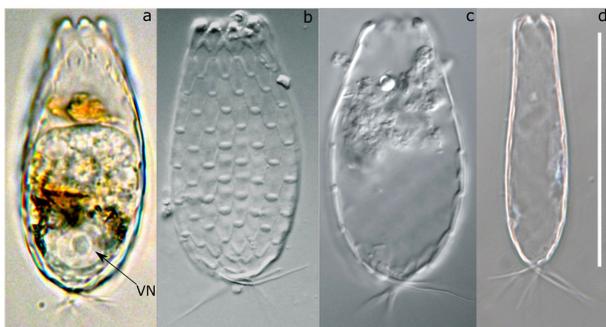
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### Testate amoeba transfer function performance along localised hydrological gradients

Andrey N. Tsyganov<sup>a,\*</sup>, Olga A. Mityaeva<sup>a</sup>, Yuri A. Mazei<sup>a,c</sup>, Richard J. Payne<sup>a,b</sup>

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Research paper

### Vegetation dynamics and fire history at the southern boundary of the forest vegetation zone in European Russia during the middle and late Holocene

Elena Y Novenko<sup>1,2</sup>, Andrey N Tsyganov<sup>3</sup>, Richard J Payne<sup>3,4</sup>, Natalia G Mazei<sup>1,2</sup>, Elena M Volkova<sup>4</sup>, Viktor A Chernyshov<sup>3</sup>, Dmitry A Kupriyanov<sup>1</sup> and Yuri A Mazei<sup>1,4</sup>

The Holocene  
1–15  
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# CHOOSE SHENZHEN

## The city of Shenzhen

Shenzhen, one of the wealthiest cities of China, is an influential place in Guangdong Province. The city is famous for its thriving nightlife and amazing myriad theme parks. A very useful transport hub, Shenzhen plays an important role in the whole of the China's connectivity. Shenzhen began as an area of fishing villages and a tranquil beach, but in the last few years, it has transformed into a lively city of a population of around 10 million people.

## Transportation

- Shenzhen Baoan International Airport is 35 kilometers from central Shenzhen
- 2 long-distance train stations
- 1 high-speed train line to Guangzhou and stops along the way
- 1 ferry terminal in Shekou with ferries to Hong Kong, Zhuhai, and Macau
- 8 metro lines

## High-Tech Industry

Shenzhen's most important economic sector lies in its role as the headquarters for many of China's High-tech companies. Shenzhen is home to many internationally successful high-tech companies, including Huawei, Tencent, BYD, Konka, Skyworth, Coolpad, ZTE, Gionee, TP-Link, DJI, BGI (Beijing Genomics Institute), OnePlus, etc. Other prestigious Chinese companies also have large operation centers in Shenzhen including the China International Marine Containers, the largest container-manufacturing company in the world, and Vanke, which is among the largest residential real estate developers in China.

## Education

13 Universities and 7 International Schools including South University of Science and Technology of China, Shenzhen Institute of Information Technology and Shenzhen Graduate School of Harbin Institute of Technology

Learn more at <http://english.sz.gov.cn/>

# STUDENT EXPERIENCE AND CAMPUS INFORMATION

## Events

The School also hosts a number of events throughout the year where students and staff come together to celebrate. These include both Russian and Chinese traditional celebrations. These events are just one of the many ways the School includes all of its students and makes them feel more like a family.

## Sports and Fitness

The University is located in the area of former University Games. The main sports facilities are centrally located at the Sports Centre and include a full range of indoor sports facilities and a 25m swimming pool.

## Accommodation

As a new student to the University you will be guaranteed a place in our University halls of residence. Student accommodation is located near the University. It includes canteen, shop, laundry, ATM and play zone.

## Current campus



## Future campus: fully ready in 2020



# ENTRY REQUIREMENTS

## Qualification

To apply for the program, you must have a bachelor's degree (or equivalent) in biology, ecology, environmental science or a related field.

The level of applicant's' language proficiency in English must not be lower than CET 4 with minimum score of 550. Applicants shall be in good health to pass the national standard of physical examination.

## List of Documents

- Bachelor's degree (if you don't have a bachelor's degree yet, include a transcript of records)
- CV
- Proof of proficiency in English
- ID (passport)
- Photo

## Application Deadline (year 2018/2019)

25 March 2018 – Chinese Mainland students

20 June 2018 – Overseas students

## Additional Tests and Interview (in English)

1. Work Experience
2. Career Exploration and Awareness of being a Professional
3. Scientific Data Interpretation

**Please check current admission requirements at [en.szmsubit.edu.cn](http://en.szmsubit.edu.cn) or send email [adm@szmsubit.edu.cn](mailto:adm@szmsubit.edu.cn)**

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