



---

LATVIAN ACADEMY OF SCIENCES

# YEARBOOK

2014

---

 ZINĀTNE

The logo for Zinātne (Science) consists of a circle with a diagonal line from the top-left to the bottom-right, creating a stylized 'Z' shape.

UDK 061.23:001(474.3)(058)  
La 801

LATVIAN ACADEMY OF SCIENCES

Akadēmijas laukums 1  
Rīga, LV 1050  
Latvia

Tel.: (371) 67225361 Fax: (371) 67821153  
E-mail: [lza@lza.lv](mailto:lza@lza.lv)  
<http://www.lza.lv>

The 2014 Latvian Academy of Sciences (LAS) Yearbook is a follow-up edition — already the fourteenth one under this title. The previous issues reflected the situation in 1991, 1992, 1994, 1995, 1996, 1997, 1998/1999, 2000/2001, 2002/2003, 2004/2005, 2006/2007, 2008/2009, and 2010/2011.

The **Yearbook 2014** contains basic information on the Academy, including the membership directory, and its workings from **the second half-year 2011 through 15 March 2014**.

This Yearbook also contains overview of scientific research in Latvia, written by the chairpersons of the LAS scientific divisions, information on the major scientific events in Latvia plus brief information on research policy issues in Latvia.

The contents of the Yearbook are also available on the Website of the LAS (<http://www.lza.lv>). See section About Academy/Annual Reports.

ISSN 1407-0383  
ISBN 978-9984-879-63-5

© Latvian Academy of Sciences, 2014

# CONTENTS

TOPICAL ISSUES FOR YEAR 2014 . . . . .	4
OVERVIEW OF SCIENTIFIC RESEARCH IN LATVIA . . . . .	9
Physical and Technical Sciences in Latvia . . . . .	9
Chemical, Biological and Medical Sciences in Latvia . . . . .	15
Agriculture and Forestry Sciences in Latvia . . . . .	22
Humanities and Social Sciences in Latvia . . . . .	32
Top scientific achievements in Latvia, 2011, 2012, 2013 . . . . .	48
Major scientific events in Latvia, 2011–2013 . . . . .	54
OVERVIEW OF RESEARCH STRATEGY AND POLICY ISSUES IN LATVIA, 2011–2014 . . . . .	57
PRESIDIUM, SENATE, BOARD, COUNCILS, COMMISSIONS . . . . .	63
SCIENTIFIC DIVISIONS OF THE ACADEMY . . . . .	68
Division of Physical and Technical Sciences . . . . .	68
Division of Chemical, Biological and Medical Sciences . . . . .	70
Division of the Humanities and Social Sciences . . . . .	73
Division of Agriculture and Forestry Sciences . . . . .	76
MEETINGS OF THE ACADEMY . . . . .	77
ACADEMY AWARDS AND OTHER AWARDS / HONOURS TO MEMBERS OF THE ACADEMY, 2011–2014 . . . . .	85
INTERNATIONAL SCIENTIFIC RELATIONS . . . . .	91
MEMBERS OF THE ACADEMY . . . . .	101
Academy membership statistics, 1993-2014 . . . . .	130
DOCTORS HONORIS CAUSA OF THE ACADEMY . . . . .	131
Appendix	
CHARTER OF THE ACADEMY . . . . .	136
MAIN NATIONAL GOVERNING BODIES OF SCIENCE . . . . .	141
ASSOCIATED INSTITUTIONS . . . . .	142
DIRECTORY . . . . .	143

## TOPICAL ISSUES FOR YEAR 2014

Ojārs Spāritis, LAS President



Dear colleagues in Latvia, countries of the European Union and in the whole Universe of science!

The Latvian science is as prominent as big is the **courage** of its scientists to engage themselves in intellectual duels on the study of theoretical problems facing dead-ends or barely heaving into sight, the **patience** to seek ways towards understanding the spiritual heritage of their country, and the **talent** to fuse their individual experience with the efforts of the whole humankind to cross new thresholds of cognition. As an institution involved in the elaboration of national science policy and in the assessment of scientific research quality and intellectual excellence, the **Latvian Academy of Sciences** can take pride in the fact that in 2015 it will celebrate the 200<sup>th</sup> anniversary since the dawn of academic science in our country and, with a look back on the rather difficult post-war period, in 2016 it will celebrate the seventh decade since its foundation.

During 2014 – a year that is marked as a time segment of Rīga being the European capital of culture filled with prominent cultural events – the Latvian Academy of Sciences is also getting ready for the Latvian Presidency of the union of European countries and positions itself within it as a union of the most prominent academic intellectuals of the country. The prestige of our Academy is shouldered by 119 full members or academicians and 125 corresponding members, who, representing men and women of eminence in applied and natural sciences, humanities and social sciences, ensure the international competitiveness, innovation quality of research, and the continuity of scientific thought in the intellectual milieu of the country. The international dimension of activities carried out by the Latvian Academy of Sciences is promoted by 92 foreign members, while 57 distinguished personalities of

our country have been awarded the title of honorary members of the Academy for their efforts in popularising the Latvian scientific thought and in studying nationally important aspects of culture, ethics of spirituality, and the vital capacity of the nation in literature, art, cultural life, and social activity.

The Second World War, repressions, and recurrent occupation of Latvia since 1940, as well as the restructuring of the economic and scientific system of the country, created during the Soviet time, since 1990–1992 have notably weakened its elite pool of scientists. Therefore, one of the most important tasks faced by the Latvian Academy of Sciences lies in the attraction of exile Latvian scientists to their homeland with the organisational help of the world congresses of Latvian scientists, as well as with successful activities of the strongest scientific research institutes in maintaining lively relations with the scientific diaspora swept away by the recent waves of emigration. The second task of vital importance, following the economic stabilisation of the country and integration in the international science market, has to do with integration of the most distinguished Latvian intellectuals of the new generation in the scientific circles both nationally and internationally. This task is undertaken by the most successful research centres with the help of external funds, which allow retaining representatives of the new generation of researchers, as well as attracting back top-quality scientists from economic emigration, and ensuring their decent quality of life with competitive levels of remuneration.

The restoration of national independence of Latvia was followed in 1992 by reorganisation of research institutes and transfer of science administration and subordination to the educational system, whereby scientists and research activities were integrated into the structure of higher education institutions and universities. Over the course of more than 20 years of the existence of independent Latvia substantial changes have taken place in both national economy and science. The new geopolitical conditions have forced the Latvian science to reorient itself from the East to the West, and it has experienced both a structural evolution and certain alterations of the intrasectoral structure. These changes are best identified by the evolution demonstrated between the first audit of science carried out by Danish international experts in 1992 and the most recent analysis of research institutions performed by the auditing company TECHNOPOLIS in 2013. These studies show that over the course of two decades cooperation with the industrial and military companies of the former Soviet Union has ceased, while contacts have been retained be-

tween institutes and higher education institutions in the field of humanities. These former links have been replaced by multiform international cooperation with research institutes and higher education institutions covering a much wider geographical spectrum of countries and continents. It offers boundless technological, practical, and source research advantages as well as provides for better international awareness of the intellectual products developed by Latvian scientists and brings research activity nearer the entrepreneurship.

Latvian science is still in the phase of development and growth, with the majority of research institutes still operating under the wing of universities or other higher education institutions and remaining to be providers of lecture courses, contributors to theoretical developments. Yet, in line with the development of innovative scientific disciplines and the thrive of research institutes to seek cooperation with business companies, research institutions in Latvia are also developing many theoretical and applied solutions in the field of market-oriented research, pursuing cooperation with international industrial consortia, reacting timely to global scientific challenges in the domains of mastering alternative energy resources, climate research, agriculture, ecology, environmental and life sciences, pharmacy, health, social sciences, and humanities with their theoretical studies and applied developments. According to the international assessment, the highest potential of the Latvian science is generated by two tens of scientific institutions that carry out a substantial part of their theoretical studies within the structural units of the University of Latvia, the Rīga Technical University, and the Daugavpils University as well as the Ventspils University College. Yet, of the same size is the part of independent research institutes that secure their activities and development by international projects and contract research, with their publications in foreign languages demonstrating the highest levels of citation and recognition.

In the given context the most perspective representatives of the vanguard of the Latvian science demonstrating the largest potential include the Latvian Institute of Organic Synthesis, the Biomedical Research and Study Centre, the Latvian State Institute of Wood Chemistry, the Institute of Solid State Physics of the University of Latvia, the Institute of Electronics and Computer Science, the Faculty of Computing of the University of Latvia, the Institute of Literature, Folklore, and Art of the University of Latvia, the Institute of Food Safety, Animal Health and Environment “BIOR”, and several other research centres. Achievement of the status of excellence and economic independence

implies that this is the path to be taken by those research institutes in Latvia that carry out market-oriented theoretical and applied research – using the state aid and the EU programme *Horizon 2020*, structural funds, industrial support to gradually free themselves from the supervisory role of universities by means of developing their own bases of technological infrastructures, production units, and using their capacity as independent and strong players to develop innovative products and take part in the advancement of world-class scientific thought.

As a state-authorised institution of representation, administration, arbitration and qualification assurance of science, the Latvian Academy of Sciences, already in 2013, continued to pursue an intensive course towards international collaboration, making much of every opportunity to represent the Latvian science in the world and helping to ensure as wide as possible partnership of our scientists. The Latvian Academy of Sciences is associated with science academies and research centres of many countries of the world through cooperation agreements, which have recently been supplemented by a new agreement with the Georgian National Academy of Sciences, while cooperation agreement with the Azerbaijan National Academy of Sciences has been renewed and expanded.

The Latvian Academy of Sciences collaborates with other national academies of science in EU countries through the European Academies Science Advisory Council (EASAC), which provides a means for the collective voice of science to be heard by European policy-makers. EASAC maintains an ongoing dialogue with policy-makers, fulfilling an advisory role to the Chief Scientific Adviser to the President of the European Commission and engaging on a regular basis with the Commission's Joint Research Centre (JRC) and Parliament's Science and Technology Options Assessment panel. Since EASAC provides independent and evidence-based advice about the scientific aspects of public policy to those who make or influence policy within the European Union, the leaders of EASAC member academies and officers of the Joint Research Centre are to visit Rīga on 22–23 May 2014 – a year prior to the Latvian Presidency of the European Union – in order to discuss the scientific aspects of the major European public policy issues, as well as to learn about the activities of our Academy and scientific potential of our country.

In 2014, it will be 20 years since the Federation of ALL European Academies (ALLEA), was founded. At present, uniting 54 academies of sciences

from 42 European countries, ALLEA has become particularly active under the presidency of Dr. Günter Stock. The federation is guided by a common understanding of Europe bound together by historical, social and political factors as well as for scientific and economic reasons. Through the involvement of Member Academies ALLEA addresses the full range of policy issues facing Europe in science, research and innovation and strives for excellence in science and scholarship, for high ethical standards in the conduct of research, and for independence from political, commercial and ideological interests. Through ALLEA, the academies have been actively engaged in recommending and advising on the new the EU framework programme *Horizon 2020*, and particularly on the role of the humanities and social science therein.

By assuming the responsible mission of holding the Presidency of the European Union in the first half of 2015, Latvia is to attract wide international attention. The Latvian Academy of Sciences will also be in this spotlight, on 20–21 April generously hosting the 14<sup>th</sup> Baltic Conference on Intellectual Cooperation with a comprehensive programme, which shall cover aspects topical for both countries of the Baltic Sea region and the rest of Europe. Looking back on the 200 years since the dawn of academic research activity in Latvia, the conference is to commemorate the Courland (Kurzeme) Society for Literature and Art founded in 1815, whose anniversary has been included into the UNESCO events calendar for 2014/2015. Yet, upon modelling the future of scientific research, the conference is to pay special attention to issues regarding the succession of spiritual values and traditions of the region's countries, the durability of demographic and natural resources, as well as the societal options for implementing progressive policy in the field of agriculture, natural sciences, technological development, health, and social affairs in the region.

This and the coming year are to be rich in events highly relevant for the scientific life, which shall form the basis of the long-awaited uplift in the economic life of our country. Though – what is this basis going to be like? What materials is it going to be built of and cemented with? For the very reason I urge the whole scientific community of Latvia to not only be active in contributing to the achievements made by their disciplinary field, but also take an ambitious stand in the rapid pace of our daily life and see also economic thinking as part of their mission as scientists.



# OVERVIEW OF SCIENTIFIC RESEARCH IN LATVIA

## PHYSICAL AND TECHNICAL SCIENCES IN LATVIA

*Juris Jansons,*

Chair of the Division of Physical and Technical Sciences

Research in the field of physical and technical sciences in Latvia is being carried out in physics, mathematics, information technology, astronomy, energy, materials science, etc. In this short review we can describe only the very main research directions.



Considerable **achievements** have been made in the field of **physics**. Juris Upatnieks, an American of Latvian descent, winner of the Grand Medal of the Latvian Academy of Sciences (1999), is one of the founders of the holography theory. After the Second World War, the University of Latvia (UL) proceeded with research in the field of solid state physics, and this enabled the establishment of the UL Institute of Solid State Physics (UL ISSP) in 1978. Today the UL ISSP has become one of the biggest and most prolific physics research centres in Latvia. In a competition organised in 2001 by the European Commission the UL ISSP was granted funding as a European Centre of Excellence. The main research areas of the Institute are as follows: electron and ion processes in wide-gap materials with a different degree of ordering; inorganic materials – single crystals, ceramics, glass, nanostructured surfaces for applications in optics, electronics, and renewable energy; multifunctional, hybrid, and organic materials for photovoltaic elements, coatings for solar batteries, storage of hydrogen, fuel cells, light emitting diodes, photonics, organic electronics; scientific instruments, analytical tools, and sensors for environmental monitoring.

Great merits in physics have been achieved by the Department of Physics, the Division of Optometry and Optical Science, and the Laser Centre of the

University of Latvia. The Laser Centre has been conducting world-class fundamental research in the field of diatomic molecule spectroscopy and astrophysics. LAS Full Member Andrejs Cēbers is among the world leaders in the studies of magnetic colloids for biology and medicine, while LAS Corresponding Member Vjačeslavs Kaščejevs takes the international lead in the development of quantum nanoelectronics technologies.

Notable progress has been made by the Institute of Atomic Physics and Spectroscopy (IAPS). The Institute performs world-class fundamental and applied research in the field of atomic physics, spectroscopy, photonics, and the related interdisciplinary areas. New optical methods and devices for application in the field of medicine and environmental monitoring are also being developed here.

Highly successful scientific research in the field of holography is being conducted at the G. Liberts Innovative Microscopy Centre (IMC) of the Daugavpils University. It has been developing successful collaboration with biologists and physicians.

The Institute of Physics of the University of Latvia (UL IP) is one of the oldest and largest centres worldwide in the field of fundamental and applied magnetohydrodynamics (MHD). The researchers of the Institute carry out research in electrohydrodynamics, hydrodynamics, tackle the problems of heat and mass transfer considering the effects of different electromagnetic fields, study the physical properties of magnetic liquids, develop technologies of magnetic liquids, and deal with problems of engineering physics. Scientists have a special relationship with technologies of liquid metals – different versions of electromagnetic pumps of liquid metals and other specific devices widely used in ferrous and non-ferrous metallurgy and nuclear engineering have been developed.

We are living in the **Information Age**, and thus we can take pride in the achievements of the Latvian scientists in this field. Scientists of Latvian descent – Andris Padegs (LAS Grand Medal 2004) and Juris Hartmanis (LAS Grand Medal 2001) – have great merits in the foundation of the disciplinary field of informatics: Andris Padegs has made a significant contribution in the creation of IBM series of computers, while Juris Hartmanis – in laying the foundations of computational complexity theory (as a sign of recognition for his research he was granted the Turing Award in 1993). In its time (1959) the

Computer Centre established in Latvia by Eižens Āriņš was among the first ones in the Soviet Union. The Latvian scientist Alvis Brāzma, winner of the LAS Grand Medal 2013, is currently leading a group of researchers for decoding the human genome at the European Molecular Biology Laboratory in the United Kingdom, and Andris Ambainis, the youngest LAS full member, winner of the LAS Grand Medal 2013, is in charge of a large European project on quantum computers.

Information technologies (IT) in Latvia are mainly developed at the Faculty of Computer Sciences of the University of Latvia (UL FCS), the Institute of Electronics and Computer Science (IECS), the Institute of Mathematics and Computer Science of the University of Latvia (UL IMCS), and the Riga Technical University (RTU).

The research group headed by Andris Ambainis at the **UL FCS** is among the world leaders in the field of quantum computing theory. Many researchers use and develop the methods elaborated in Latvia. Scientists from Cambridge, Paris, Princeton, and Singapore work both together and concurrently with the Latvian scientists.

The **IECS** performs fundamental and applied research in the field of computer science, as well as information, communication, and electronic technologies, and engineering. The main research areas and world-class expertise cover modern signal processing methods, super-precision timing technologies and ultra-wide-band signal processing, data acquisition, and development of transmission systems (methods, equipment, and software). The domains within the field of discrete signal processing include signal processing of sensors and networked embedded systems, software-defined radio equipment, signal-dependent analysis of non-stationary signals, biometric and brain signal processing, microminiaturisation of data acquisition and processing. For many years the IECS has been conducting research in the field of high-precision event timing. Measurement systems and devices for different applications have been developed, and orders from China, Japan, Korea, and Poland addressing the needs of laser ranging of artificial Earth satellites have been fulfilled.

Over the course of 15 years, a unique niche in the field of engineering and computer sciences in Latvia has been taken by the Transport and Telecommu-

nication Institute (TTI) conducting research in transport modelling, transport policy, smart transport systems, and transport logistics.

Apart from research, the **UL IMCS** has always been involved in commercial software and tool development. It represents one of the largest Internet service providers in Latvia (*SigmaNet*, earlier known as *Latnet*). The main research areas of the Institute are as follows. Modelling languages and tools: the most important achievement is represented by one of the most advanced modelling tools *GRADE*, which was created in 1990–2000 in cooperation with the German company *Infologistik GmbH* and is a still unmatched system for managing very large graph-like diagrams. Graph theory and visual information processing: research is being conducted on both theoretical (topological graph theory) and applied (graphs in bioinformatics) levels. Development of rain sensors that provide for an automatic control of cleaning equipment for plate surfaces and a detector of counterfeit coins are currently among the most important practical applications in the field of visual information processing. Semantic web technologies or next generation information systems that are „understood” not only by humans, but also by automatic computer programmes, are developing. It is of vital importance in this field to set up national semantic infrastructures in good time. It entails both the creation of ontology portals and centralised data storages as well as the preparation of ontological and linguistic resources specific for Latvia. The most important project in this field of research is represented by *SemTi Kamols*. Computational linguistics: the central problem here lies in the analysis, representation, and synthesis of a meaning expressed in the form of a natural language. Bioinformatics pertains to the modelling of gene regulatory networks and the development of methods for analysis of network behaviour and stability, as well as the development of evolution-based methods for the comparison and analysis of protein structures. One of the major developments in this field is represented by the software tool set *SIMBIOMS* designed for the diagnostics and illness risk assessment of diabetes. The UL IMCS has also performed research on the development of real time systems: a wireless telephone access system, a radio broadcasting studio control system, integration of video surveillance, alarms and telecommunication devices, etc. Research aimed at supplying academic institutions of Latvia with high quality computer network services is being carried on.

The economic development largely determines the materials being used. From the history of civilisation we know of the Stone Age, the Bronze Age, the Iron Age. Nowadays we can speak about the era of nano-, synthetic, and composite materials. Beyond doubt, the flagship of the Latvian science in this field is represented by the above-mentioned UL ISSP, while innovative materials and technologies are studied also at other institutes.

The specialisation of the Institute of Polymer Mechanics of the University of Latvia (UL IPM) lies in the applications of composite materials in mechanical engineering and construction, the calculus of their designs, research on the effects of external environmental factors on the mechanical properties of materials, forecasting of long-term properties.

Energy is the life-blood of the economy. Nowadays it enables people to survive and successfully operate in any environment. The leading institute in the field of energy research in Latvia is the Institute of Physical Energetics (IPE). The main research areas include regional energy sector analysis and optimisation, energy saving management, energy and environmental policy studies, renewable energy resources, energy efficiency, systems of electrical networks and electricity supply, clean fossil energy technologies, electrical devices and equipment. Based on the analysis of pricing and tariff policy, scientists carry out modelling and analysis of the energy-environment interactions as well as look into possibilities for energy efficiency improvement and energy conservation. As a result, technologies directed towards rational use of energy to ensure sustainable development of Latvia and to optimise the heat energy production and consumption system are brought forward.

Notable achievements in Latvia are also present in the field of astronomy, which is of high importance given the role played by astronomical observations in the development of science, philosophy, culture, and the overall concept of the Universe. With the help of the **Schmidt telescope** at Riekstulalns in Baldone (set up at the Astrophysics Observatory of the Institute of Astronomy, University of Latvia) – the only telescope of the kind in the Baltics and one of the largest telescopes of this system in the world, the Latvian researchers have discovered more than **350** carbon stars, **70** novae in the Andromeda Galaxy (M 31), and, in recent years, more than **20** asteroids (small planets), including ones pertaining to the family of near-Earth asteroids (*NEOA* type). The archive of astronomical images at the Baldone Observatory holds more

than **25 500** celestial photographs. It represents a unique and internationally significant source of information about galaxies, stars, nebulae, small Solar System bodies, and other celestial objects, about the changes having occurred in space over the period of 40 years. After digitisation it will be possible and easy to use this information by astronomers all over the world. Our scientists make successful use of the unique antennas at the Ventspils International Radio Astronomy Centre (VIRAC) that were taken over from the Russian army (radio telescopes RT-32 and RT-16) and are now used for the international radio astronomy research studies, satellite navigation, satellite signal analysis and processing, space technologies, and solutions of space-based information technology. In 2009, the Latvian Government and the European Space Agency (ESA) has concluded an agreement concerning space cooperation for peaceful purposes. The agreed areas of cooperation cover space science, astronomy, and astrophysics.

Latvian scientists have developed very wide national and international cooperation. They take part in many national and international collaborative projects, including ones funded under the EU FP5, FP6 and FP7, IEE, Interreg, EC JRC, IAEA, COST, Twinning, SmartGrids ERA-Net, FENCO ERA-Net, the Latvia–Belarus bilateral agreement programme, the Climate Change Funding Programme as well as ones receiving funding from the European Social Fund, the European Regional Development Fund, state research programmes, the Latvian Council of Science, and others.

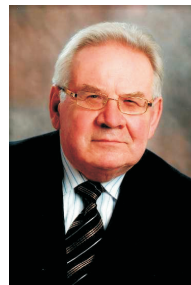
This review demonstrates the existence of scientific schools in Latvia and the presence of young researchers capable of continuing the traditions and productive work in science.

CHEMICAL, BIOLOGICAL, AND MEDICAL SCIENCES  
IN LATVIA*Raimonds Valters,*

Chair of the Division of Chemical, Biological, and Medical Sciences

Research by members of the Division is being carried out in chemistry, biology, biotechnology, medicine, pharmacy, ecology, environmental sciences, geography, geology, and materials sciences.

The most notable achievements by scientists of the Division have been made in the development of methods for organic synthesis and in the search for new therapeutic substances.



The Latvian Institute of Organic Synthesis (LIOS) was founded in 1957 by Professor Solomon Hiller (1910–1975). The main fields of research pursued by the Institute cover organic synthesis and advanced technologies in organic synthesis, medicinal chemistry, drug discovery, molecular pharmacology, and clinical trials. Currently, with ten scientific laboratories and 12 research groups, LIOS is the leading research centre in the field of organic synthesis, medicinal chemistry and drug discovery in the Baltic region. Both independent and contract research projects are being carried out in cooperation with Latvian and foreign universities and pharmaceutical companies. Since the foundation of the Institute, LIOS researchers have discovered 17 original drugs and 86 original manufacturing processes of active pharmaceutical ingredients. Three original drugs are currently under clinical trials worldwide. International cooperation in drug design and discovery was started by LIOS already before the collapse of the USSR. Nowadays LIOS has ongoing projects with 11 pharmaceutical companies worldwide. There is a wide range of different cooperation models used – starting from simple contract research projects and up to close partnership during the whole process of drug design and discovery. The most important industrial partners of LIOS come from the UK, Germany, Denmark, Sweden, Finland, the USA, and Japan. As a result, over the last five years 64 patents have been filed in collaboration with business partners. LIOS possesses all the necessary equipment to perform research in organic synthesis, drug design and discovery: NMR spec-

trometers (200 MHz, 400 MHz, 600 MHz, and 800 MHz), various spectroscopy equipment (EPR, FTIR, X-ray diffractometer), equipment for gas chromatography, high performance liquid chromatography, equipment for pharmacological and biological studies as well as for physical tests and pharmaceutical technical procedures of finished dosage forms.

LIOS is an editor of a widely recognised journal *Chemistry of Heterocyclic Compounds*, published in both Russian and English (by Springer).

A chemical and experimental study of a new original cardioprotective drug candidate allowing to proceed with clinical trials of this substance has been accomplished by LIOS (LAS Full Member Maija Dambrova, LAS Full Member Ivars Kalviņš, LAS Corresponding Member Osvalds Pugovičs, *Dr. Ilmārs Stonāns* a.o.; major scientific achievements selected by LAS, henceforth – LAS achievements, 2013). New methodology for the synthesis of organic compounds based on the activation of carbon-hydrogen (C—H) bonds that can be applied in the synthesis of new therapeutic substances has been developed by LIOS (LAS Corresponding Member Edgars Sūna a.o., LAS achievements, 2012). LIOS has successfully implemented the first round of clinical trials of a new therapeutic substance applicable in the treatment of late complications of Parkinson's disease (LAS Full Member Ivars Kalviņš, LAS Corresponding Member Valerjans Kauss a.o.; LAS achievements, 2011). LIOS scientists are also successful in conducting research on the three-dimensional structures of protein domains through the application of methods of multi-dimensional nuclear magnetic resonance spectroscopy (LAS Full Member Edvards Liepiņš, *Dr.chem.* Kristaps Jaudzems).

Latvia has a developed pharmaceutical industry (joint-stock companies „Grindeks”, „Olainfarm” a.o.) that provides ground for successful cooperation of LIOS scientists with the local industrial partners. Training of specialists is ensured by the Faculty of Materials Science and Applied Chemistry of the Rīga Technical University and institutes thereof (institutes of Technology of Organic Chemistry, Biomaterials and Biomechanics, Applied Chemistry, Polymer Materials, Silicate Materials, and General Chemical Engineering) as well as by the Faculty of Chemistry of the University of Latvia. Synthesis and study of organic glasses with original structure for application in photonics equipment has been accomplished at the Institute of Applied Chemistry of the



Rīga Technical University in cooperation with the Institute of Solid State Physics of the University of Latvia (LAS Corresponding Member Valdis Kokars, LAS Full Member Valdis Kampars, LAS Corresponding Member Mārtiņš Rutkis a.o.; LAS achievements, 2013).

The Latvian State Institute of Wood Chemistry (LSIWC) was founded in 1946. The research strategy of LSIWC is geared towards the development of science-based, environmentally friendly waste-free technologies for obtaining competitive materials and products from wood and other plant biomass, ensuring sustainable utilisation of natural resources for economic, social, and ecological benefits. The main research domains of the Institute cover fundamental studies in the field of wood science, wood and polymers chemistry; applied studies for obtaining innovative products and materials from renewable raw material resources – wood and plant biomass. LSIWC scientists have world-class achievements in the development of cryogenic heat insulation materials from polyurethanes for insulation of liquefied hydrogen tanks in space vehicle engines.

Scientists from the Institute of Inorganic Chemistry of the Rīga Technical University (founded in 1946) conduct theoretical and applied research in the field of inorganic chemistry, chemical technology, nanotechnology, materials sciences. The main research areas cover plasma chemistry and technology of inorganic compounds, synthesis of nanoparticles, nanostructured materials, new ceramic and metal-ceramic materials, electrochemistry of liquid membranes, extraction technology of noble and non-ferrous metals from industrial solutions and development of nanocatalysts, structure and properties of coordination compounds and application in the analysis of industrial and natural objects, synthesis and structure of inorganic compounds of phosphorus and nitrogen and application in the development of ion-conducting materials. New catalytic methods for the production of glycerine acid and lactic acid by means of oxidising glycerine with air or molecular oxygen as well as a new synthesis method of more active and more selective catalysts have been developed in cooperation with scientists from the Institute of Applied Chemistry of the Rīga Technical University (*Dr.chem.* Svetlana Čornaja, LAS Full Member Valdis Kampars, *Dr.sc.ing.* Ēriks Palčevskis, *Dr.chem.* Lidija Kuļikova, *Dr.chem.* Vera Serga and Antons Cvetkovs; LAS achievements, 2012).

Research conducted by Latvian scientists in the field of molecular biology, biomedicine, and biotechnology is concentrated in the Latvian Biomedical Research and Study Centre (BMC, founded in 1993). BMC has become a strong research centre where both fundamental and applied research in molecular microbiology, development of vaccines, cell biology, genomics and proteomics, cancer biology, immunology, structural biology, and other areas is being carried out. In order to make use of the knowledge and skills accumulated by BMC researchers, several small spin-off companies (limited liability companies “Genera”, “ASLA Biotech”, “Cilmes šūnu tehnoloģijas” [Stem Cell Technologies]) successfully providing their services both in Latvia and abroad are operating under the wing of BMC. Highly-skilled academic staff and world-class equipment ensure the possibilities for training Latvian and foreign undergraduate, postgraduate and PhD students. BMC acts as a coordinator and the key partner in several state research programmes (infectious diseases, human genome research, population ageing) with an aim of developing and implementing methods of molecular medicine as well as those of national health monitoring in the Latvian health care. Collaboration with partner groups in the EU and CIS countries in the field of protein, cell biology and genome research, and bioinformatics (BBMRI, p3G, ELIXIR) is supplemented with contract research and agreements with European biotechnology companies (Cytos Biotechnology GmbH, Rhein Biotech GmbH a.o.) as well as technology transfer to Latvian companies such as joint-stock company “Grindeks” and limited liability companies “Genera”, “ASLA Biotech”, “Cilmes šūnu tehnoloģijas”. Development of selective and tissue-targeted drug delivery systems, recombinant vaccines, gene therapy and immunotherapy agents, new DNA and serological diagnostic methods, and stem cell-based drugs constitute the main innovative activities of BMC contributing to regional cooperation and development.

Jointly with associates from the Pauls Stradiņš Clinical University Hospital, the Faculty of Medicine of the University of Latvia, and the Rīga Eastern Clinical University Hospital, BMC scientists have discovered new genetic variations of the somatostatin receptor enabling the provision of individual therapy for acromegalic patients (LAS corresponding members Jānis Kloviņš, Valdis Pīrāgs a.o.; LAS achievements, 2011). New cancer-specific autoantibodies for early diagnostics of gastric cancer and forecasting progress

of the disease have been discovered in collaboration with scientists from the Faculty of Medicine of the University of Latvia and the Otto von Guericke University Magdeburg (Germany) (LAS corresponding members Aija Linē, Mārcis Leja a.o.; LAS achievements, 2012). Comprehensive research has been conducted in the field of cell biology and in the investigation of the molecular basis of malignant tumours, opening up fundamentally novel ways for cancer treatment (LAS Full Member Jekaterina Ērenpreisa; LAS achievements, 2013, BMC).

Research in the so-called „green” biology is being conducted by scientists at the Institute of Biology of the University of Latvia (IBUL) (founded in 1951). Presently the Institute hosts 11 research laboratories and one research group. Research activities of IBUL have been focused in two main research directions: 1) investigation of natural resources and ecology with the aim to provide the theoretical basis for sustainable development of the natural resources of Latvia (laboratories of Bioindication, Botany, Experimental Entomology, Geobotany, Hydrobiology, Marine Ecology, Ornithology), and 2) bioregulatory mechanisms of vital processes in plants and animals in connection with the improvement of their bioproductivity (laboratories of Animal Biochemistry and Physiology, Mineral Nutrition of Plants, Plant Genetics, Magnetobiology, and research group of Genomics and Bioinformatics). IBUL also hosts the Bird Ringing Centre, the Herbarium of Latvia, the Collections of Stock Cultures, the Biological agents-regulators of plant pest populations, and large Entomological Collection. Scientists of the Institute make active use of several research bases: Ornithological Research Centre at Lake Engure, Ornithological Station at Pape, Ornithological Station at Kalnāji, Long-term Ecological Research Station at Mazsalaca.

Scientists of the Institute take part in several state-funded biomonitoring programmes. A new, more complete six-volume edition of the *Red Data Book* is being prepared in both Latvian and English as the part of the “Life” Project since the mid-1990s. A new high-yielding summer wheat variety ‘Robijs’ that is particularly suitable for cultivation in the Baltic region has been developed in cooperation with the State Stende Cereal Breeding Institute (Vija Strazdiņa, Maija Ceraukste, *Dr.biol.* Dace Grauda, LAS Full Member Īzaks Rašals a.o.; LAS achievements, 2011).

Intensive research in the field of „green” biology is being performed by scientists from the Institute of Systematic Biology of the Daugavpils University (DU ISB, established in 2005). The structure of the Institute includes the European Centre for Coleopterological Research, Study and Research Centre „Ilgas”, Laboratory of Systematic Botany, Laboratory of Systematic Zoology, Laboratory of Animal Ecology and Evolution, Laboratory of Laser Scanning Microscopy, Laboratory of Parasitology, and Laboratory of Biotechnologies. ISB publishes the *Baltic Journal of Coleopterology* and *Acta Biologica Universitatis Daugavpiliensis*. The Institute gathers collections of plant herbaria, beetles, molluscs, tiny mammals, and bird blood parasites. Scientists of the Institute have gained international recognition with their research in coleopterology. Three beetle species have been named after LAS Full Member Arvīds Barševskis: *Omophron barsevskisi Valainis*, 2011, found in Cameroon, Nigeria; *Platyderus barsevskisi Anichtchenko*, 2010, found in Spain; *Lesteva barsevskisi Shavrin*, 2010, found in Tadjhikistan.

Research in the field of medicine is being conducted by scientists from the Rīga Stradiņš University (RSU, established in 1950, known under the current title since 2002) and institutes thereof (Institute of Anatomy and Anthropology, Augusts Kirhenšteins Institute of Microbiology and Virology, Institute of Hereditary Cancer), as well as from the Faculty of Medicine of the University of Latvia (established in 1919, restored in 1998) and institutes thereof (Institute of Cardiology, Institute of Experimental and Clinical Medicine).

The research domains prioritised by the Rīga Stradiņš University are as follows: factors of biological ageing processes and quality of life among the population of Latvia; development of algorithms for diagnosis and management of illness based on structural, functional, and biomechanical research; investigation of exogenous and endogenous health-threatening factors among the population of Latvia; role of infection agents in the genesis and progression of infections currently considered urgent in Latvia; investigation of factors causing infant mortality and disability; research into clinical and molecular properties of malignant tumours for the advancement of early diagnostics and treatment strategies; immunohistochemical, radiological, and clinical research on facial jaw deformities (anomalies); clinical epidemiology of functional limitations caused by health disorders in Latvia; social, economic, legal, and medical problems of globalisation. New compositions of dietary

supplements containing natural glycopeptides applicable in the field of oncology and virology have been developed and introduced (*Dr. Jevgenijs Jermolajevs, Lilija Peškova, Guntis Vītols, Dr.med. Simona Doniņa*; LAS achievements, 2013, Augusts Kirhenšteins Institute of Microbiology and Virology of the Rīga Stradiņš University).

The first liver transplantation surgery has been successfully accomplished in Latvia under the leadership of LAS full members Jānis Gardovskis and Rafails Rozentāls (Pauls Stradiņš Clinical University Hospital, Rīga Stradiņš University; LAS achievements, 2011). A new non-invasive method for diagnosing coronary heart disease has been developed (LAS Foreign Member Kristaps Zariņš and LAS Corresponding Member Andrejs Ērglis).

LAS Full Member Bruno Andersons, LAS Corresponding Member Valdis Pīrāgs, and LAS Full Member Jānis Stradiņš are acting as heads of state research programmes. Members of the Division are leaders and participants of over 60 international and many national research projects.

## AGRICULTURE AND FORESTRY SCIENCES IN LATVIA

*Baiba Rivža,*

Chair of the Division of Agriculture and Forestry Sciences



In Latvia, like in the EU and many other EU countries, sectors of agriculture, food, veterinary medicine, agricultural economics, and forestry are of vital importance. The role of science in the development of these sectors should not be underestimated since cooperation with scientists frequently results in the development of new products and improvement of the existing ones thus contributing to the growth in their sales and exports. Pretty often companies approach research institutes with requests for assistance in product development. Thus, for instance, the Latvia State Institute of Fruit-Growing has been involved in the development of fruit/berry purees for babies produced and distributed by LatekoFood Ltd., fruit cubes produced by Biographorganicsweets Ltd., cosmetics with Japanese quince seed oil produced by Silvanols Ltd., quince syrup produced by Amberbloom Ltd., etc.

Significant research is also conducted in field crop breeding and organic farming.

Organic farming is based on the knowledge of natural processes and the non-use of chemicals in the production process. Harvest is achieved by means of ensuring the natural feeding from water, air, and soil, mediated by solar energy and microorganisms, thereby potato growers need to have good knowledge of their ecological demands. The key precondition for successful management in the production of plant-growing produce lies in the availability of healthy soil. The contribution made by scientists in ensuring healthy soil is invaluable.

Under the changeable agroclimatic conditions present in Latvia the right choice of a variety is also of high importance. This applies particularly to winter crops. Already for many years advice to farmers on these issues are successfully given by scientists from several research institutes, including the State Priekuļi Plant Breeding Institute, Research Institute of Agriculture,

Latgale Agriculture Research Centre, State Stende Cereal Breeding Institute, and others. Despite the comparatively small territory of Latvia, the agroclimatic conditions vary quite substantially in various parts of the country. Research institutes are accordingly located in different regions of Latvia in order to carry out research on the particular area. Thus, for instance, a test ground with different varieties of winter wheat and triticale and breeding lines is annually being set up in the town of Priekulī with an aim of acquainting growers with the various varieties.

Scientists have also made their contribution in the development of fruit farming. For instance, according to data from the Central Statistical Bureau of the Republic of Latvia, the average yield of apple-trees makes up 1.76–3.10 tons per hectare, while in cultivated orchards it amounted to 15–40 tons per hectare in 2011 (data from the Latvia State Institute of Fruit-Growing, 2011). Likewise the average yield per tree in Latvia in 2011, according to data from the Central Statistical Bureau, was 1.4–2.5 kilos, while that in the cultivated orchards reached from 12 up to 32 kilos per tree. Interest in planting gardens has been growing, local fruit and berries as well as processed products thereof are available not only in the local markets but also on the shelves of supermarkets, and demand for this kind of products is increasing.

The integrated growing system introduced in orchards and berry gardens with the help of scientists enables fruit delivery under the programme “School fruit”. The biggest effect has come from the provided training and consultancy.

Already for two years the National Armed Forces of Latvia consume food that has been recommended by specialists from the Latvia University of Agriculture.

High-quality safe and healthy animal raw materials for human consumption can only be obtained from healthy animals, therefore the successful research cooperation between scientists from the research institute “Sīgra” and the Faculty of Veterinary Medicine of the Latvia University of Agriculture in the field of non-communicable animal diseases has to be emphasised. Thus, for instance, research conducted at the Preclinical Institute in the framework of its main research topic “Changes in the physiological, pathophysiological, and morphofunctional processes of the digestive system in the postnatal ontogenesis of animals and their effect on the quality of the obtainable pro-

duction” focuses on the functional dynamics of the gastrohepatoduodenal system in goats of different ages in connection with invasion of digestive tract and the importance of these processes in obtaining good-quality products. Given the rapid increase in the number of small animals (dogs, cats, etc.) in the country, research on small animals is also highly relevant. Contribution in this field focuses on pathogenic research on the regularity of physiological processes of individual organs in small animals (mainly dogs) and changes thereof. Research in the field of veterinary anaesthesiology is being carried on – an essential part of this work is devoted to studying the effects of premedication drugs such as atropine sulphate and acepromazine maleate as well as narcosis agents such as ketamine hydrochloride and diazepam, widely used in dogs for providing general anaesthesia, on the physiological parameters of the eye.

Scientific solutions elaborated by researchers in the development of forestry are also of vital importance.

The forest sector, that is based on local renewable resources, is one of the leading sectors of the Latvian economy, characterised by rapid development and notable structural changes having taken place during the years of independence of the country.

Questions regarding a possibly precise assessment of forest and wood resources, substantiation of annual logging amount, and survey of the produced timber volume have always been high on the agenda. Positive assessment in this field can be made of the pool of data obtained by scientists as a result of the statistical inventory of forest resources that can be used not only in the assessment of wood resources but also in research on resource quality, resource dynamics, and potential utilisation volumes. Interesting studies have been launched on the application of modern remote probing methods in the assessment of wood resources and in the detection of changes in the sanitary condition of the forest.

Issues regarding the suitability of different tree varieties in the afforestation of low-value agricultural lands as well as the effects of afforestation technologies on the course of tree growth have been addressed in the domain of forest regeneration. Research has been conducted on recultivation possibilities of peat deposits and gravel pits.



In the field of forest protection special attention is being devoted to restricting the impact exerted by pine weevil and cockchafers in young forest stands, to inquiring into the distribution dynamics of weevils in relation to regular damages made to forest stands by extreme winds, and to studying the limiting factors of basal rot.

The multifunctional character of forest management, the territorial spread of objects, the increasing amount of information, and the growing speed in the execution of work all bring about an urgent issue regarding the use of information technologies in the development and application of a support system model for planning and decision-making with regard to sustainable management of wood resources. Here first and foremost the notable contribution made by the joint-stock company “Latvijas valsts meži” [Latvia’s State Forests] by way of implementing innovative software and corresponding databases in the planning of economic activity, organisation of production and timber flow inventory has to be commended. Research activities in this field are carried out also at the Forest Faculty of the Latvia University of Agriculture where issues regarding next generation software development in the planning of forest management and in the establishment of risk management system in forestry are dealt with. In its turn, the Latvian State Forest Research Institute “Silava” in cooperation with Swedish forestry scientists have been involved in tackling the problem regarding elaboration of a model for sustainable, economically justified utilisation of forest resources.

Despite the strained financial conditions, scientists undertake considerable efforts in both studying research problems and drafting scientific publications and popular science articles. Likewise they take part in the implementation of research projects, including international ones. Scientists thus make strides both in Latvia and abroad:

- In 2013, representatives of the LAS Division of Agriculture and Forestry Sciences ran the European Regional Development Fund (ERDF) project “Capacity building of the Latvian Academy of Sciences and the Latvian Academy of Agricultural and Forestry Sciences and development of international project applications” providing for the development of international project applications, participation in international scientific conferences, and preparation of scientific publications. Due to the ERDF funding, members of the Division had the opportunity to attend interna-

tional meetings of agricultural scientists, to prepare several scientific publications indexed by the SCOPUS database, as well as to take part in the development of five international research project applications.

- The LAS Division of Agriculture and Forestry Sciences has pursued cooperation with the Ministry of Agriculture of the Republic of Latvia, the Latvian Academy of Agricultural and Forestry Sciences, the Board of Directors of Agricultural research institutions, the Cooperation Council of Farmers' organisations, the Union of European Academies for Science Applied to Agriculture, Food and Nature, the Nordic Association of Agricultural Scientists, the European Federation of Mentoring for Girls and Women (*Womentor*), the European Agricultural Research Initiative (EURAGRI), and other organisations.
- In 2013, participation of representatives of the Division in the ERA-Net project "Tackling the Challenges in the Implementation of Sustainable and Multifunctional Forestry through enhanced Research Coordination for Policy Decisions" (SUMFOREST) funded under the EU 7<sup>th</sup> Framework Programme and membership in the thematic partnership "Innovation and Creativity Equality" of the Swedish Institute were approved.

Among the major scientific achievements in Latvia in 2011–2013 the following ones have been short-listed by the Latvian Academy of Sciences:

- 2013: A study on the biologically active substances in food-stuffs upon the application of the latest packing technologies in pre-packing and storing, ensuring high quality and safe period of use (researchers of the Latvia University of Agriculture *Dr.habil.sc.ing.* Lija Dukaļska, *Dr.sc.ing.* Evita Straumīte, *Dr.sc.ing.* Sandra Muižniece-Brasava).
- 2012: Breeding of the variety of the Japanese quince 'Rasa' for fruit production. The yield capacity, cold resistance, non-thorny kind, big and easy to collect fruit, and the high-quality biochemical composition of the new variety along with the elaborated methods of fruit processing provides new opportunities for the development of farmsteads (*Dr.agr.* Silvija Ruisa, LAS Corresponding Member Dalija Segliņa, Latvia State Institute of Fruit-Growing).
- 2011: Development of a new high-yielding summer wheat variety 'Robijs' that is particularly suitable for cultivation in the Baltic region (Vija

Strazdiņa, Maija Ceraukste, *Dr.biol.* Dace Grauda, LAS Full Member Īzaks Rašals, State Stende Cereal Breeding Institute, Institute of Biology of the University of Latvia).

The following books and monographs written by members of the Division were published in 2013:

- *Voldemārs Strīķis* (series: Rectors of the Jelgava Academy of Agriculture/Latvian Academy of Agriculture/Latvia University of Agriculture [JLA-LLA-LLU]). Jelgava: Latvia University of Agriculture, 2013, 288 pp. (in Latvian)
- *Studiju programmu starptautiskā izvērtēšana kā priekšnoteikums Latvijas augstākās izglītības modernizācijai* [International Evaluation of Study Programmes as a Precondition for the Modernisation of Higher Education in Latvia: Monograph]. Edited by B. Rivža, I. Brence. Rīga: Council of Higher Education of the Republic of Latvia, 2013, 308 pp. (in Latvian)
- *Lauku sievietiņu uzņēmējdarbību veicinošie sociālie faktori* [Social Factors Conductive to Rural Women's Entrepreneurship]. B. Rivža, M. Krūzmētra, S. Rivža. Jelgava: Latvia University of Agriculture, 2013, 137 pp. (in Latvian)

### **Key research institutions in the field of agriculture and forestry sciences**

Studies as well as research undertaken at the **Latvia University of Agriculture (LUA)** ([www.llu.lv](http://www.llu.lv)) deal with agriculture, forestry, food technology, veterinary medicine, civil and environmental engineering, economics, education, social sciences, and information technologies. The number of students is slightly over 6000 and the number of lecturers and researchers reaches 500.

**Latvian Academy of Agricultural and Forestry Sciences** ([www.llmza.lv](http://www.llmza.lv)) is a public union of scientists uniting representatives of agriculture, veterinary medicine, food science, engineering, and forestry based on the principle of voluntary participation. The Academy undertakes execution of research projects, organisation of visiting sessions, publication of scientific articles, etc.

### **Key research centres in the field of agriculture**

Main research areas of the **LUA Institute of Agrobiotechnology** include cultivation of plants (breeding technologies of field crops; energy crops; seed science; plant breeding and genetics; grassland management and fodder production; organic farming); animal sciences (production of animal products; animal genetics, breeding and genetic resources; animal feeding and welfare); horticulture (production technologies of fruit, berries, vegetables, spice plants, and decorative plants; production of apiculture products; bee breeding and research of genetic resources; research and preservation of genetic resources of garden plants; breeding of decorative plants, and garden design).

Research topics addressed by the **LUA Institute of Soil and Plant Sciences** ([http://www2.llu.lv/homepg/lf/aa\\_zin\\_inst/](http://www2.llu.lv/homepg/lf/aa_zin_inst/)), inter alia stemming from work carried out in cooperation with other institutions both in Latvia and abroad, cover a wide range of issues starting with ones concerning soil utilisation, biology, and protection, elimination of harmful organisms in crop farming, up to those dealing with advancement of agrotechnology of cultivated plants.

**Latvia State Institute of Fruit-Growing** ([www.lvai.lv](http://www.lvai.lv)) is the leading fruit-growing research institution in Latvia. Research results are regularly passed on to Latvian commercial fruit-growers and fruit processing industry as recommendations, innovative products and technologies. The Institute holds authorship of several varieties of fruit-plants and lilac registered in Latvia, varieties of grapes registered in Sweden, and varieties of apple-trees registered in Belgium. A successful balance between applied research required by the sector and modern fundamental science has been ensured at the Institute.

The mission of the **State Priekuli Plant Breeding Institute** ([www.priekuliselekcija.lv](http://www.priekuliselekcija.lv)) lies in the performance of scientific research and development of innovative technologies contributing to sustainable development and competitiveness of the Latvian crop farming sector. The Institute undertakes seed propagation for varieties of field crop, including gramineae and clover, varieties of peas, spring barley, etc.

Activities of the **State Stende Cereal Breeding Institute** ([www.stendeselekcija.lv](http://www.stendeselekcija.lv)) are aimed at generating new knowledge and inno-

vative technologies in grain cultivation, seed farming, and other fields of crop cultivation. Research on the biological diversity of crops, breeding of varieties, and introduction of biotechnology methods therein, investigation of elements of cultivation technologies for the needs of conventional and organic farming, suitability of grain for a particular use of harvest is being carried out at the Institute.

**LUA Research Institute of Agriculture** ([www.zzi.llu.lv](http://www.zzi.llu.lv)) is the only place in Latvia where breeding of perennial papilionaceous plants and gramineae as well as development of cold-resistant, high-yielding, disease-resistant, and perennial varieties is being carried out. Patents of clover, lucerne, ryegrass, fescue, and buckwheat varieties have been registered and are being maintained by the Institute. A wide network of seed growers covering the whole territory of Latvia has been established thus ensuring the further propagation of the highest category seeds of varieties developed at the Institute.

The main tasks set by the LUA limited liability company “**Latvian Plant Protection Research Centre**” include research activity in the field of plant protection as well as research for testing the efficiency of new plant health products for utilisation in the agroclimatic conditions of Latvia.

**Latgale Agriculture Research Centre** carries out scientific research, undertakes field crop variety testing, and provides consultancy services. The main project areas cover evaluation of crop maintenance technologies as well as linseed and flax developed in Latvia covering East Latvia; research/maintenance of the collection of genetic resources of flax and hemp.

**Püre Horticultural Research Centre** ([www.puresdis.lv](http://www.puresdis.lv)) represents the only research institution in Latvia conducting research on the varieties of vegetables and strawberries and cultivation technologies thereof. Significant part of research is taken up by the investigation of the gene pool of vegetables and fruit plants where both elaboration of methods (descriptors) and partial molecular certification is being carried out. The most ample collections of cultivated rowan-trees and shadberries have been gathered in Püre. Research also on the other varieties of fruit-trees, berry bushes, and cultivation technologies thereof as well as on the preservation of vegetable and fruit harvests is being performed. DUS tests for strawberries and rootstocks are being carried out. A well-equipped biotechnology laboratory has been established allowing to con-

duct molecular analysis, ELISA tests, and to use *in vitro* technologies in propagation and rehabilitation of fruit plants.

**LUA Study and Research Farm “Vecauce”** ([www.vecauce.lv](http://www.vecauce.lv)) is a multi-branch agricultural company enabling students of the Latvia University of Agriculture to carry out research for their bachelor, master, and PhD thesis. Currently it undertakes activities in the following areas: multi-branch economic production – cattle breeding, crop farming, production of biogas, fruit-growing, logging, woodworking, joinery; scientific research, etc.

The main research areas of the **Institute of Biology of the University of Latvia** ([www.lubi.edu.lv](http://www.lubi.edu.lv)) are as follows: investigation of natural resources and ecology with the aim to provide the theoretical basis for sustainable development of Latvia's natural resources; bioregulatory mechanisms of vital processes in plants and animals in connection with the improvement of their bioproductivity.

### **Key research centres in the field of forestry science**

Activities of the **Latvian State Forestry Research Institute “Silava”** ([www.silava.lv](http://www.silava.lv)) are geared towards investigation of forest ecosystems and components thereof, as well as elaboration of recommendations for ensuring sustainable forest management, rational and more efficient use of forest resources and products.

The mission of the **Latvian State Institute of Wood Chemistry** ([www.kki.lv](http://www.kki.lv)) is to promote the development of science-based, environmentally friendly waste-free technologies for obtaining competitive materials and products from wood and wood biomass.

### **Key research centre in the field of food science and veterinary medicine**

**Institute of Food Safety, Animal Health, and Environment “BIOR”** ([www.bior.gov.lv](http://www.bior.gov.lv)) is the leading institution of the National Level Research Centre of the Use of Agricultural Resources and Food in the area of “Food safety, animal infectious diseases and their risk assessment”. The following three research domains have been prioritised by “BIOR”: food and environment; veterinary medicine; fisheries. The mission of the research institute is

to maintain public and animal health, quality of the environment, sustainable use of fish and other biological water resources, as well as the competitiveness of companies involved in the food chain by means of creating and transferring knowledge, ensuring scientific expertise of high quality and laboratory tests, and providing services on an international scale.

### **Key research centre in the field of agricultural engineering**

**LUA Research Institute of Agricultural Machinery** (<http://www.llu-ltzi.lv/>) specialises in research on agricultural mechanics and mathematical modelling of technological processes; elaboration, acquisition, and efficiency assessment of automatic and remote control methods of agricultural technological processes and machinery appropriate for precise agriculture; development of industrially effective, ecologically safe field crop cultivation technologies; improvement of cultivation, harvesting, and processing technologies of technical and unconventional (cranberries, medicinal plants, etc.) cultures; research on technologies and equipment of competitive renewable energy resources and on the use of biomass for energy production; research and development for ensuring animal welfare.

### **Key research centres in the field of regional economics**

Main activity areas covered by the **LAS Institute of Economics** ([www.ei.lza.lv](http://www.ei.lza.lv)) include socio-economic research and other studies, publishing, processing of scientific and technical information, and provision of services for the use thereof as well as educational activities.

Key research domains of the **Latvian State Institute of Agrarian Economics** ([www.lvaei.lv](http://www.lvaei.lv)) include analysis of agrarian economics and policy with a particular focus on the economics of the agricultural sector and sector-related companies; development, quality control, and economics of sustainable environment and food; territorial development, and economics of rural policy.

## HUMANITIES AND SOCIAL SCIENCES IN LATVIA

*Raita Karnīte*

Chair of the Division of Humanities and Social Sciences



Research in the field of humanities is aimed at acquiring knowledge based on first-hand data on the Latvian language, literature, culture, and folklore as well as history from earliest times to the present and at making discoveries in philosophy not only in order to amplify knowledge in these domains but also to facilitate the unity and cultural identity of the nation. Research in the field of social sciences is aimed at providing explanations for the socioeconomic processes taking place in the country and forecasting their future trends, creating the social, political, economic, and legal basis for the development of the state and the society. These aims have been and are still being successfully implemented in a continuous research process carried out by over 20 research organisations.

Knowledge stemming from research conducted in the field of humanities and social sciences forms the spiritual essence of the nation, strengthens awareness of the values of the Latvian language and culture, and thereby is of significant national value. On the other hand, this knowledge creates the basis for the development of Baltic studies as an international field of science. Besides, research in humanities and social sciences carried out in Latvia reveals additional knowledge about countries and nations that the destiny of the Latvian people has been intertwined with – the Estonians, the Lithuanians, the Finns, the Swedes, the Germans, the Poles, the Russians, the Belarusians, and others, thus making this research of wide international value.

**Foundation, infrastructure**

The major body of research in humanities and social sciences has been brought together under the symbol of „Lettonics” (Latvian studies). The concept of „Lettonics” has been introduced in the *Dictionary of the Latvian Literary Language* in 1980. This concept is used to denote a complex interdisciplinary study „on the evolution of the ethnic composition of the Latvian population and the formation of the anthropological type of the Latvians,



on the formation of tribal unions of ancient Latvians, the Latvian nationality and the nation, on the ethnic, ethnodemographic, and social conditions of the Latvians and the foreigners residing in Latvia both historically and at present, on the development and current situation of the Latvian language, folklore, and mythology, on the traditional economic activity and lifestyle of the Latvians, on the material and mental culture, traditions, education, folk and professional art, their interrelationships, on the cultural and historical contacts between the Latvians and other nations, on the development of public opinion, literature, science, publishing, on the most important historical developments that have formed and influenced the destinies of the Latvians, and other topics”<sup>1</sup>.

The idea of „Lettonics” originated from the thematic study „Investigation and publication of the cultural and historical sources of Lettonics and history of science” launched in 1991 (led by LAS Full Member Saulvedis Cimermanis). It was followed up by an identically-named collaborative programme approved by the Latvian Council of Science in 1995 uniting research projects of several fields of humanities. In January 2011, the Centre of Lettonics was opened at the University of Latvia. Since November 2002, visitors have access to the Internet portal [www.letonika.lv](http://www.letonika.lv) – „an Internet-based Latvian inquiry and translation system primarily aimed at providing systematised, encyclopaedic reference and translation information by means of creating new, identifying existing, and batching together digital resources on Latvia”.<sup>2</sup>

State research programme „Lettonics: Research on History, Language and Culture” for 2005–2009 (abbrev.: Lettonics) was launched in the second half of 2005 when a new system of research organisation was introduced in Latvia – altogether nine priority fields of science were defined and nine corresponding state research programmes were set up. Coordination of the programme was delegated to the Latvian Academy of Sciences (lead by LAS

<sup>1</sup> Stradiņš, J., Cimermanis, S. Par „Letonikas” jēdzienu un saturu [On the concept and contents of „Lettonics”]. *Latvijas Vēstnesis*, 1995, Nr. 87 (370), June 7 (in Latvian); Stradiņš, J., Cimermanis, S. Par letonikas jēdzienu un saturu [On the concept and contents of Lettonics]. *Latvijas Zinātņu Akadēmijas Vēstis*, A daļa, Nr. 5/6, 1.–7. lpp. (in Latvian).

<sup>2</sup> Jansone, I. Valsts pētījumu programma „Letonika: pētījumi par vēsturi, valodu un kultūru” [State research programme „Lettonics: research on history, language, and culture”]. *Letonika pirmais kongress: Plenārsēžu materiāli* [1<sup>st</sup> congress of Lettonics: Materials of plenary sessions]. Rīga: Latvijas Zinātņu akadēmija, 2006, 76 lpp. (in Latvian).

Full Member Jānis Stradiņš). The programme brought together around 300 specialists in humanities from 15 institutions. One-fourth of the staff was made up of young scientists.

The follow-up of “Lettonics” – the State Research Programme „National identity (language, history of Latvia, culture, human safety)” for 2010–2013 (abbrev.: Identity) was launched in 2010.

With an aim of strengthening the research infrastructure for conducting humanitarian and social studies two national level research centres were established in 2012 – Latvian Language, Cultural Heritage, and Creative Technologies (in collaboration between three agencies of the University of Latvia (UL) – UL Institute of Latvian History, UL Institute of Literature, Folklore, and Art, and UL Institute of Philosophy and Sociology), and Socioeconomics and Public Management (UL in cooperation with the Latvian State Institute of Agrarian Economics). Funding for the infrastructure development of these centres has been allocated from the European Regional Development Fund (ERDF).

The programme “Identity” brings together contribution made by 19 research institutions in the framework of 13 sub-projects. The programme is coordinated by the Latvian Academy of Sciences, lead by the head of the LAS Senate, LAS Full Member Jānis Stradiņš, and the five sub-projects of the programme are managed by full members of the Academy.

The main task of the programme is to conduct systematic, in-depth, interdisciplinary, comprehensive studies in the subject areas covered by Lettonics, to facilitate the protection of fundamental human values, taking into account the changing historical and social conditions determined by the development of Latvia, and to unite researchers working in the field of humanities and social sciences.

Research in the field of humanities and social sciences is being performed at the Latvian Academy of Sciences, at the UL agencies – research institutes and faculties, Rīga Stradiņš University, Daugavpils University, Liepāja University, Rēzekne Higher Education Institution, Ventspils University College, Rīga Teacher Training and Educational Management Academy, Art Academy of Latvia, Latvian Academy of Culture, Baltic Centre for Strategic Studies, Latvian State Institute of Agrarian Economics, private higher education institutions, and private research institutes.

Research institutes representing the above-mentioned disciplines take part in the projects funded under the European Regional Development Fund and the European Social Fund as well as the international projects of the European Research Area (EU Framework programmes, ESFRI projects CLARIN, CULTURE).

An illustration of a secured succession of generations in humanities and social sciences is provided by the annually increasing number of new holders of doctoral degrees, the stable share (~12%) of young scientists involved in state research programmes, as well as by the fact that young scientists made up at least one-third of all participants in several of the 44 sessions organised in the framework of the 3<sup>rd</sup> World Congress of Latvian Scientists held in 2011.

### **Research topics**

Research in the field of humanities and social sciences encompasses a wide spectrum of topics that evolve and expand from one research programme to another and beyond those. From the outset research in Lettonics has been of an interdisciplinary nature. In addition to the traditional topics of Lettonics (Latvian language, history, and culture of Latvia from earliest times to the present) the programme “Identity” also covers themes that are topical nowadays such as national and European identity, regional identity, national identity and capacity for action, national identity and social human security, human security and pluralism of identities, national identity in the digital environment, aesthetics of identity, national identity and competing identities, etc. Public recognition has been gained by studies devoted to the individual, the role of the person in history: the history of Latvia and social memory, cultural memory, collective memory, human path and role in various critical points in history. Research on social memory represents a new research field in Latvia that is of high value and popular with the public since it reveals a lot of things so far untold about the Soviet times.

### ***Linguistics***

The Latvian language is being studied at several research institutions. Research carried out at the Latvian Language Institute of the University of Latvia is devoted to language theory, interdisciplinary studies in Baltic studies,

investigation of the Latvian language dialects and new loanwords, and the role of language in the formation of national identity (Ilga Jansone, Brigita Bušmane, Anna Stafecka), along with editing explanatory dictionaries and preparing a new edition of the Latvian language grammar (Juris Grigorjevs, Daina Nītiņa, Anna Vulāne, Dace Markus). These studies are used to inform the policy-making process with regard to the Latvian language policy (Ina Druviete, Jānis Valdmāns, Andrejs Veisbergs).

For a long time the Institute supplied terminological studies and ensured operation of the Terminology Commission of the Latvian Academy of Sciences (Valentīna Skujiņa).

Studies on child language have become an established research field pursued at the Rīga Teacher Training and Educational Management Academy (Dace Markus). The Latvian language is also being studied at the regional higher education institutions in Liepāja, Rēzekne, Daugavpils.

### ***Literary theory, folklore, and art***

Research undertaken at the Institute of Literature, Folklore, and Art of the University of Latvia as well as at the universities of Daugavpils, Rēzekne, and Liepāja is devoted to literary theory and literary history (Māra Grudule), comparative literature (Dace Bula, Maija Burima, Fjodors Fjodorovs, Irēna Saleniece), interaction between culture and power in the Latvian language, literature, and folklore (Ausma Cimdiņa), development of individual genres of literature in Latvia (Benedikts Kalnačs). Research reveals and documents the development of the Latvian theatre and film art and music in Latvia and abroad (Viktors Hausmanis, Arnolds Klotiņš). An unusual research area is represented by the Indian culture (Viktors Ivbulis).

Altogether 13 outstanding writers, poets, and publicists are honorary members of the Latvian Academy of Sciences.

### ***History, anthropology, archaeology, and ethnology***

Research carried out at the Institute of Latvian History of the University of Latvia covers the period of time from the Stone Age to the present. The early, medieval, contemporary, and modern history of Latvia as well as the history of two occupations is being studied at the Institute. The Institute also hosts the repositories of archaeological, bioarchaeological, and ethnographic

materials. These repositories are used on a regular basis by both students and Latvian and foreign scientists.

The Dendrochronology Laboratory formed at the Institute is so far the only research unit in Latvia where dendrochronological dating of the wooden building elements mainly deriving from historical structures preserved in the territory of Latvia as well as compilation of long absolute tree-ring chronologies has been undertaken since early 1990s.

The staff of the Institute is also involved in archaeological excavation as well as in drafting scientific publications based on the excavated material (Ieva Ose, Zigrīda Apala, Guntis Zemītis a.o.). Castles and hill-forts of Latvia are studied also at the Latvian Academy of Culture (Juris Urtāns) as well as at the existing castle museums (Anna Jurkāne, Turaida Museum). Given the tangled history of Latvia, historical research and archaeological discoveries provide good ground for international cooperation.

The Latvian Academy of Sciences, in cooperation with the Rīga Teacher Training and Educational Management Academy, the Latvian Association of Local and Regional Governments, and individual local governments organises investigation, popularisation, and contemporary use of the cultural and historical values of the regional territories of Latvia (Dace Markus, Saulvedis Cimermanis, Ojārs Spārītis).

An invaluable cultural and historic property is represented by studies on the history, culture, and language of the disappearing ethnic group of Livs (Saulvedis Cimermanis, Renāte Blumberga, Valts Ernštreits)<sup>3</sup>. The Livs are a nation of Baltic Finns residing in the territory of Latvia that speak an ancient language of the Finno-Ugric group. Nowadays there are slightly more than 200 Livs residing in Latvia, while the Liv language is spoken by mere ten people. Nevertheless, the Livs have been defined as the legal second core nation of Latvia alongside the Latvians. The Liv language has exerted a strong

---

<sup>3</sup> A richly illustrated book in cultural history *Libieši. Vēsture, valoda un kultūra* [Livs. History, Language, and Culture] (in Latvian) was published in 2013 (compilers and editors: Renāte Blumberga, Tapio Mäkeläinen, Karl Pajusalu. Riga: Līvo Kultūr sidām, 2013. 544 lpp.) representing a comprehensive, coordinated collection of articles by Estonian, Latvian, Liv, Finnish, and German archaeologists, ethnographers, folklorists, artists, and linguists covering the period of time from the 10<sup>th</sup> century up to the present. The underlying studies have been based on unpublished documents retrieved from the archives of Estonia, Russia, Latvia, Finland as well as on the makings of scientific expeditions by archaeologists, ethnographers, folklorists, linguists.

impact on the development of the Latvian language. Under its influence the emphasis on the first syllable of the word characteristic of the Latvian language has come into being. Belonging to the group of Finno-Ugric languages accounts for the international interest in research on the history, culture and language of Livs: these issues are tackled in Estonia, Russia, Hungary, Germany, and elsewhere.

Cooperation with the Cultural Centre of Livs is pursued by the Latvian Academy of Sciences in the framework of Lettonics.

Research in modern history is undertaken by Daina Bleiere in studying the occupation regimes in Latvia (1940–1965) and the political, economic, legal, social, and ethnic legacies thereof. The international significance of this kind of research is also indisputable. Not in vain has research into the recent history facilitated successful participation of the Research Centre of Oral History of the Daugavpils University (lead by Irēna Saleniece) in international projects.

Research in history is also performed at the Commission of Latvian Historians working under the auspices of the President of Latvia as well as regional higher education institutions.

### ***History of culture and art, architecture***

The environment, culture, and town planning of Latvia provide rich ground for interdisciplinary studies. The history of culture and art is being studied at the Latvian Academy of Culture (Juris Urtāns, cultural history, also archaeology, local history studies) and the Art Academy of Latvia (Ojārs Spārītis, history of art, architecture and history of churches).

Research performed at the Institute of Art History of the Art Academy of Latvia focuses on the medieval architecture and art, architecture and town planning of the 17<sup>th</sup>–18<sup>th</sup> centuries, history of visual arts, contemporary art. Activities undertaken by the Institute are also aimed at improving the methodology of art history, as well as developing publications facilitating cultural education and scientific tourism in the form of guide-books (the series “Monuments of art and architecture in Rīga”) and digital resources. The staff of the Institute provides lecture courses for bachelor and master study programmes in arts (iconography, latest developments in the Latvian art history) (Eduards Kļaviņš, Elita Grosmane, Daina Lāce).

### ***Architecture***

Research in architecture is performed at the Rīga Technical University (Jānis Krastiņš) with a focus on the theory of architecture, town planning, and individual objects (buildings, churches). The main body of this research is devoted to studies on Rīga.

In total 22 outstanding artists – painters, actors, composers, directors, musicians, architects – are among the honorary members of the Latvian Academy of Sciences.

### ***Philosophy and psychology***

Research in philosophy in Latvia is concentrated in the Institute of Philosophy and Sociology. Studies are being conducted in several research areas. In the field of philosophical thought issues of feministic philosophy stand out, alongside the emphasis on the formation of modernity in Latvia in the view of philosophy and history of ideas (Maija Kūle). The most valuable asset of the Institute is represented by the encyclopaedic edition *Ideju vēsture Latvijā* [History of Philosophical Thought in Latvia] in several volumes (Ella Buceniece).

Nowadays a wide research area is devoted to the unity of the Latvian and European culture and ideology, with specific research topics covering the historical and contemporary perspective on European values in the Latvian culture (Maija Kūle) as well as on the development of the European intellectual tradition in the Latvian culture and philosophy (Ella Buceniece).

The third strand of research pertains to studies on the collective and individual identity in life stories (Baiba Bela). Life-story research reveals the historical and social developments from a peculiar, personified perspective and frequently alters the conventional ideas, for instance, on the societal impact of war and Stalin's deportations. Identity research together with religious studies (Solveiga Krūmiņa-Koņkova) undertaken by the Institute form part of internationally relevant research domains.

According to the interest of researchers, individual studies resulting in publications are being carried out at the Institute (e.g., the book by Igors Šuvajevs, *Psihoanalīzes pēdas Latvijā* [Traces of Psychoanalysis in Latvia]).

### *Sociology and communication sciences*

Identity research, including life-story research, is performed also at the Faculty of Social Sciences and the Advanced Social and Political Research Institute of the University of Latvia, the National Library of Latvia, the Rīga Technical University, the Latvia University of Agriculture, and regional higher education institutions – the Vidzeme University of Applied Sciences and the Daugavpils University. Studies are being carried out both within and beyond the framework of the Identity Programme. For instance, the topic of intercultural communication in Latvia is taken up in a research project „Latgale – Latvia – Europe” (Zaiga Ikere) implemented at the Daugavpils University.

Research and study work at the Faculty of Social Sciences of the University of Latvia is organised in four domains – studies in political science, communication sciences, sociology, information and library science.

Topics addressed by researchers in the field of sociology include the provision of ethnic equality and prevention of discrimination in Latvia, sociology of culture and ethnic relations (Aivars Tabuns), regional and rural development, human capital and development thereof (Aija Zobena), qualitative research methods, oral history, identity, studies of the Latvian identity among the Latvian communities abroad (Baiba Bela), urban sociology, social aspects of labour market and social work, an individual and work in the rural areas of Latvia (young scientists Līga Rasnača, Agnese Cimdiņa, Ieva Raubiško).

Research in the field of communication sciences (Inta Brikše, Vita Zelče, Viktors Freibergs, Ainārs Dimants, Ābrams Kleckins, Skaidrite Lasmane) is focused on communication theory, the role of media in societal development and distribution of political authority, journalistic culture, organisational culture, and other topics.

### *Political sciences*

There are several research strands that are pursued by researchers in the field of political sciences: revival of the Latvian consciousness and experience of nonviolent resistance, development of democracy, foreign policy of Latvia.



Research devoted to the revival of the Latvian national consciousness and the experience of nonviolent resistance in Latvia (Tālavš Jundzis, Baltic Centre for Strategic Studies) has documented the history of the recent liberation movement. The globally unique experience of Latvia and the Baltic States in regaining independence at the moment of the collapse of the totalitarian regime has been presented in a monograph and other publications in Latvian and English.

The issues dealing with the development of democracy and international integration are also addressed by researchers at the Faculty of Social Sciences of the University of Latvia.

### *Legal sciences*

Research in the field of legal sciences is concentrated at the University of Latvia employing 30 Doctors of Law, including LAS full members Kalvis Torgāns, Juris Bojārs, LAS corresponding members Ārija Meikališa and Ringolds Balodis, LAS Honorary Doctor Egils Levits. The main research areas cover state's rights (Egils Levits), international and European rights, research into the theoretical basis of fundamental laws, investigation of the scientific basis of legal regulation with regard to individual branches and processes in the field of commercial law (e.g., construction rights, legal regulation of public procurement), civil rights, entrepreneurship, comparative law, consumer rights protection. Research deals with the application and development of private rights in Latvia in the framework of the European Union, contractual and delictual rights (Kalvis Torgāns). Commentaries on laws are also being drafted.

### *Economics and statistics*

Economic research is performed at all higher education institutions of Latvia as well as at the Latvian State Institute of Agrarian Economics, private higher education institutions, and private research institutes. Theoretical studies are related to the application and development of instruments of mathematical modelling and mathematical statistics. Research conducted in the framework of programmes funded from the EU Structural Funds and international collaborative projects is of a more applied nature. Applied research is conducted by research institutes and banks.

The most relevant study of the recent years in the field of statistics is represented by the self-assessments of local governments of Latvia in 2012.<sup>4</sup>

Increasing research efforts are observed in interdisciplinary fields such as social anthropology, studies of social capital and social networks in relation to economic development, as well as regional economics, etc. Research in these domains tends to be socio-economic by nature and is carried out in cooperation with experts in sociology.

### ***Demography***

The tense demographic situation in Latvia defines the topicality of research tackling demographic problems. Studies in demography are being carried out at the University of Latvia (Pēteris Zvidriņš, Juris Krūmiņš, Pārsla Eglīte).

### ***Pedagogy***

Research in pedagogy is mainly performed at those higher education institutions that offer teacher training study programmes. Contemporary research in pedagogy deals with analysing the impact of media and virtual space on the educational process and identity formation (Zandra Rubene) as well as the development of entrepreneurial capacity of schoolchildren, students, and teachers (Tatjana Koķe, Karine Oganisjana).

### ***Theology***

Theology represents a new research area in Latvia.

### **Publications**

Performance of humanities and social science has been documented in a wide body of publications and scientific editions.

Results of the collaborative programme „Lettonics” have been published in 154 books and more than 1200 articles and have been discussed at conferences. In the framework of the programme CD ROMs have been released, databases have been made public, academic readings have been organised.

---

<sup>4</sup> Krastiņš, O., Vanags, I., Valodiņš, E. *Latvijas vietējo pašvaldību pašvērtējumi 2012. gadā* [Self-assessments of local governments of Latvia in 2012]. Rīga: Latvijas Centrālā statistikas pārvalde, 2012. 130 lpp. (in Latvian).

Special attention has been devoted to studying and digitalising the sources of Lettonics. Results have been presented and prospects of further developments have been mapped out at four congresses of Lettonics held in 2005, 2007, 2009, 2011, and 2013.

Results of the programme „Identity” are envisaged to be published in four volumes of an academic edition *Latvija un latvieši* [Latvia and the Latvians] as well as other valuable editions.

A wide overview of the achievements made in humanities and social sciences is provided at the world congresses of Latvian scientists. The 1<sup>st</sup> World Congress of Latvian Scientists was convened in 1991, followed by the 2<sup>nd</sup> congress in 2001. On 24–27 October 2011, the Joint 3<sup>rd</sup> World Congress of Latvian Scientists and the 4<sup>th</sup> Congress of Lettonics bringing together 1200 participants from 15 countries was held in Rīga. The 4<sup>th</sup> World Congress of Latvian Scientists is planned to be organised in 2018.

The Latvian Academy of Sciences oversees publication of the academic journal *Latvijas Zinātņu Akadēmijas Vēstis. A daļa* (Proceedings of the Latvian Academy of Sciences. Section A: Humanities and Social Sciences, in Latvian, with summaries in English) and supports the academic journal *Humanities and Social Sciences: Latvia* published in English by the University of Latvia.

The universities and higher education institutions of Latvia issue one or several academic publications. Research institutes also publish their own journals:

- Latvian Language Institute of the University of Latvia: collected articles *Linguistica Lettica* (comprising a bibliography of linguistics in 2004 and 2005);

- Institute of Literature, Folklore, and Art of the University of Latvia: journal *Letonica*;

- Institute of Latvian History of the University of Latvia: journal *Latvijas Vēstures Institūta Žurnāls* [Journal of the Institute of Latvian History];

- A book series “Letonikas bibliotēka” [Lettonics Library] issued by the publishing house “Latvijas Zinātņu Akadēmijas Vēstis” [Proceedings of the Latvian Academy of Sciences] under the subject „Sources of cultural history and municipalities of Latvia”;

- Institute of Philosophy and Sociology of the University of Latvia: a book series “Filozofiskā bibliotēka” [Philosophical Library] based on research on the development of professional philosophy since early 20<sup>th</sup> century (works of or studies on Kārlis Zariņš, Pēteris Zālīte, Alberts Freijs, and other distinguished thinkers);

- Institute of Art History of the Art Academy of Latvia: journal *Mākslas Vēsture un Teorija* [History and Theory of Art] and a series of collected articles *Materiāli Latvijas mākslas vēsturei* [Materials for the Art History of Latvia];

- Since 2010, the Academic publishers of the University of Latvia publish *Latvijas Universitātes Žurnāls: Juridiskā Zinātne* [Journal of the University of Latvia: Law];

- Faculty of Social Sciences of the University of Latvia publishes an annual report *Latvia. Human Development Report*.

### **Repositories**

Research results in the field of humanities and social sciences are gathered in several repositories:

- Institute of Literature, Folklore, and Art of the University of Latvia: Repository of Latvian Folklore, including the cabinet of Latvian folksongs – the historical collection of Latvian folklore gathered by Krišjānis Barons;

- Institute of Latvian History of the University of Latvia: Repository of Archaeological Materials, Repository of Ethnographic Materials, and Repository of Bioarchaeological Materials.

### **Encyclopaedias and databases**

The Internet site [www.letonika.lv](http://www.letonika.lv) provides access to eleven encyclopaedias, including the Latvian Cultural Canon, seven electronic dictionaries (English, Russian, German, Lithuanian, Estonian, Special Latin Words, and a special dictionary for the construction of foreign personal names in Latvian). The website of Lettonics features links to foreign dictionaries, a terminological database *Akademterm* with a link to *EuroTermBank*, an Internet library providing for search of publications by author, genre, and title, a multimedia link to pictures, audio and video recordings, and a link to an online translator.

The Latvian Language Institute has undertaken the development of the digital encyclopaedia of humanities (covering literature, folklore, theatre, cinematography, music, philosophy, history of Latvia, Latvian language) that is to be integrated with the e-infrastructures already operational in Latvia, Europe, and world-wide, thus ensuring accessibility, processing, and preservation of scientific data. Each disciplinary field is envisaged to have a separate set of encyclopaedias made available in a single site. The digital encyclopaedia shall comprise databases on personalia, terminology, subfields, and other items, an index, a chronicle, and it is planned to develop publications of an encyclopaedic nature (publications on the Internet as well as a book format); research and publications thereof in the electronic media and on paper; publication of primary sources of disciplines in both virtual and traditional forms. Part of these resources are to be translated into English, German, Russian, and other languages.

A database of accessions and the phonetics part of the atlas of the Latvian language dialects are also developed at the Institute.

The National Library of Latvia hosts a database „Latvian book publishing staff until 1918” comprising biographies of various length as well as information on the persons involved in the production and distribution of Latvian books. The gathered information includes both data published in encyclopaedic and literary sources and first-hand information retrieved from archives on the Latvian book publishers, typographers, bookbinders, illustrators, funders, organisers of the book publishing process, censors, retailers, librarians, bibliographers, book scholars.

The Internet site of the State Research Programme „Identity” (<http://www.nacionalaidentitate.lv>) provides access to the academic repository of the National digital library of Latvia ACADEMIA and the database „Latvian book publishing staff until 1918” developed by the National Library of Latvia. The „Digital collection of the Latvian memory institutions” is being developed in the framework of the programme „Identity”. Its register contains collections gathered by archives, museums, and libraries. The objects of the digital collection consist of metadata and files. A set of digital objects is uniquely identifiable: it features a definite title, a definite creator, the date of creation as well as an identifier (e.g., URL address), which indicates a collec-

tion independently of whether the collection is published separately or as part of a data array.

The Institute of Latvian History of the University of Latvia maintains several databases, including one on the Latvian people arrested by the Soviet repressive authorities in June–November 1940.

The Institute of Art History of the Art Academy of Latvia has launched the collective long-term effort to make the Latvian art history available on the Internet in both Latvian and English (<http://www.makslasvesture.lv/index.php>).

### **International cooperation**

Despite the national orientation of humanities and social sciences, sectoral institutions and scientists pursue collaboration with experts abroad.

### **Excellence**

Each year, based on proposals submitted by research institutions and expert opinion, the Latvian Academy of Sciences announces „Ten major achievements in theoretical and applied sciences”. Among those one shall mention the collectively authored *Valodniecības pamatterminu skaidrojošā vārdnīca* [Explanatory Dictionary of Basic Terms in Linguistics] (in Latvian) published in 2007 (managing editor Valentīna Skujiņa). In 2010, the encyclopaedia *Valodniecība Latvijā: fakti un biogrāfijas* [Linguistics in Latvia: Facts and Biographies] (in Latvian), comprising over 500 biographical entries of Latvian and foreign linguists and a timeline of events related to linguistics and cultural history from the 13<sup>th</sup> century up to 2009, made into the list (Andrejs Bankavs, Ilga Jansone, Latvian Language Institute of the University of Latvia). For the first time, one of the most valuable sources of medieval history – *Investigation Protocol by Franciscus de Moliano*, was translated from Latin into Latvian and released into scholarly circulation (Ēvalds Mugarēvičs, Institute of Latvian History of the University of Latvia).

In 2011, research on the urban history of Rīga in the 17<sup>th</sup> century, based on the cartographic materials from Latvian and foreign archives, was accomplished (*Dr.hist.* Margarita Barzdeviča, Institute of Latvian History of the University of Latvia). A study on one of the brands of the Latvian cultural canon in visual arts, artist Kārlis Padegs, and his epoch was published

(*Dr.art.* Jānis Kalnačs, Vidzeme University of Applied Sciences). A research study on national identity and development of the Latvian society was presented in the annual *Human Development Report 2010/2011: National Identity, Mobility, and Capability* (editors-in-chief *Dr.sc.soc.* Brigita Zepa, *Dr.sc.soc.* Evija Kļave, Advanced Social and Political Research Institute of the University of Latvia).

In 2012, comprehensive research on the Latvian music during the less-studied and most ideology-laden period of time was presented in the voluminous work *Mūzika okupācijā: Latvijas mūzikas dzīve un jaunrade, 1940–1945* [Music Under Occupation. Latvian Music Life and Creative Work in 1940–1945] (in Latvian) by *Dr.art.* Arnolds Klotiņš (Institute of Literature, Folklore, and Art of the University of Latvia). The book *Senie ziemeļbriežu mednieki Latvijā* [The Ancient Reindeer Hunters in Latvia] (in Latvian) by *Dr.hist.* Ilga Zagorska (Institute of Latvian History of the University of Latvia) provided an insight into a study on the earliest settlement of Latvia during the Paleolithic – 10 500–9200 BC, based on unique, first-hand materials. Recognition was also gained by *Dr.math.* Mihails Hazans (Faculty of Economics and Management of the University of Latvia) for his study on emigration trends and its driving forces in Latvia and Estonia between 2000–2010.

Experts in humanities and social sciences, including those associated with the Division of Humanities and Social Sciences at the Latvian Academy of Sciences, which can relatively be treated as a representative sample thereof, have gained high recognition of their work in the form of various awards and acknowledgements. For more information see the *Yearbooks* of the Latvian Academy of Sciences and the website [www.lza.lv](http://www.lza.lv).

## TOP SCIENTIFIC ACHIEVEMENTS IN LATVIA, 2011, 2012, 2013

Based on the submissions of universities, scientific institutes, and research centres, the following most significant scientific achievements in Latvia have been selected by the Latvian Academy of Sciences (LAS):

### In 2011

#### *In the field of theoretical science:*

- **Development of new control measures for sustainable development of large power management systems with the corresponding results presented in the monograph *Dynamic Management of Sustainable Development: Methods for Large Technical Systems* (Springer, London).** *Dr.habil.sc.ing.* Zigurds Krišāns, *Dr.sc.ing.* Anna Mutule, LAS Corresponding Member Jurijs Merkurjevs, *Dr.sc.ing.* Irina Oļeinikova, Institute of Physical Energetics and Rīga Technical University.
- **Development of methods of problem analysis and mathematical models for software design, presented in the monograph *Model-Driven Domain Analysis and Software Development: Architectures and Functions* (IGI Global, New York).** LAS Honorary Member Jānis Osis, *Dr.sc.ing.* Ērika Ašņina, Rīga Technical University.
- **Construction of models of inorganic single- and multi-wall nanotubes using linear group formalism and calculation of their properties applying only fundamental constants.** *Dr.chem.* Jurijs Žukovskis, LAS Foreign Member Roberts Evarestovs, Institute of Solid State Physics of the University of Latvia in cooperation with the Saint Petersburg State University.
- **Discovery of new genetic variations of the somatostatin receptor enabling the provision of individual therapy for acromegalic patients.** LAS Corresponding Member Jānis Kloviņš, Ivo Kāpa, Raitis Pečulis, *PhD* Liene Ņikitina-Zaķe, Latvian Biomedical Research and Study Centre; LAS Corresponding Member Valdis Pīrāgs, Darja Ciganoka, Faculty of Medicine of the University of Latvia; Inga Balcere, Andra Valtere, Pauls Stradiņš Clinical University Hospital; Ieva Lase, Rīga Eastern Clinical University Hospital.



- **Accomplishment of research on the urban history of Rīga in the 17<sup>th</sup> century, based on the cartographic materials from Latvian and foreign archives.** *Dr.hist.* Margarita Barzdeviča, Institute of Latvian History of the University of Latvia.
- **Publication of a study on one of the brands of the Latvian cultural canon in visual arts – artist Kārlis Padegs and his epoch.** *Dr.art.* Jānis Kalnačs, Vidzeme University of Applied Sciences.

*In the field of practical applications:*

- **Successful accomplishment of the first liver transplantation in Latvia –** under the leadership of LAS full members Jānis Gardovskis and Rafails Rozentāls, Pauls Stradiņš Clinical University Hospital, Rīga Stradiņš University.
- **Successful implementation of the first round of clinical trials of a new therapeutic substance applicable in the treatment of late complications of Parkinson’s disease.** *PhD* Juris Fotins, *Dr.chem.* Aleksandrs Gutcaits, LAS Full Member Ivars Kalviņš, *PhD* Ronalds Zemribo, LAS Corresponding Member Valerjans Kauss, Latvian Institute of Organic Synthesis in cooperation with *Merz Pharmaceuticals*, Germany.
- **Demonstration of the determining role of the amorphous nature of the structure on the localisation of electrons in vitreous silica. This discovery can be applied in the modernisation of electronic memory devices.** *Dr.habil.phys.* Anatolijs Truhins, Institute of Solid State Physics of the University of Latvia.
- **Development of a super-elastic sensor prototype (composite of elastomers and electroconducting nanoparticles) that is applicable in wide-area detection of pressure and impact.** LAS Corresponding Member Māris Knite, *Dr.sc.ing.* Juris Zavickis, Velta Tupureina, Valdis Teteris, Artis Linarts, Gatis Podiņš, Rīga Technical University; Āris Solovjovs, Joint Stock Company “Baltijas Gumijas fabrika”.
- **Accomplishment of a significant research study on national identity and development of the Latvian society presented in the *Human Development Report 2010/2011: National Identity, Mobility, and Capability* –** editors-in-chief *Dr.sc.soc.* Brigita Zepa, *Dr.sc.soc.* Evija Kļave, Advanced Social and Political Research Institute of the University of Latvia.

**Development of a new high-yielding summer wheat variety ‘Robijs’ that is particularly suitable for cultivation in the Baltic region.** Vija Strazdiņa, Maija Ceraukste, State Stende Cereal Breeding Institute; *Dr.biol.* Dace Grauda, LAS Full Member Īzaks Rašals, Institute of Biology of the University of Latvia.

### In 2012

#### *In the field of theoretical science:*

- **Elaboration of a new method for the development of quantum algorithms and establishment of a new application of quantum interference in the field of nanoelectronics.** LAS Full Member Andris Ambainis, *PhD/Dr.phys.* Vjačeslavs Kaščejevs, *Dr.sc.comp.* Aleksandrs Belovs, Jānis Timošenko, University of Latvia.
- **Elaboration of new methodology for the synthesis of organic compounds based on the activation of carbon-hydrogen (C—H) bonds. Method can be applied in the synthesis of new therapeutic substances.** Dmitrijs Lubriks, Igors Sokolovs, LAS Corresponding Member Edgars Sūna, Latvian Institute of Organic Synthesis.
- **Introduction of the notion of ultrametric algorithms in computer science by LAS Full Member Rūsiņš Mārtiņš Freivalds with his scientific article “Ultrametric Finite Automata and Turing Machines”, notably broadening the potential of computer science.** University of Latvia.
- **Accomplishment of comprehensive research on the Latvian music during the occupation years (1940–1945) as the less-studied and most ideology-laden period of time.** Corresponding author and editor *Dr.art.* Arnolds Klotiņš, Institute of Literature, Folklore, and Art of the University of Latvia.
- **Accomplishment of a study on the earliest settlement of Latvia during the Paleolithic – 10 500–9200 BC, based on unique, first-hand materials.** *Dr.hist.* Ilga Zagorska, Institute of Latvian History of the University of Latvia.

#### *In the field of practical applications:*

- **Development of new catalytic methods for the production of glycerine acid and lactic acid by means of oxidising glycerine with air or molecu-**

- lar oxygen. Development of a new method for the synthesis of more active and more selective catalysts.** *Dr.chem.* Svetlana Čornaja, LAS Full Member Valdis Kampars, *Dr.sc.ing.* Ēriks Palčevskis, *Dr.chem.* Lidija Kuļikova, *Dr.chem.* Vera Serga, *Dr.chem.* Svetlana Žižkuna, Konstantīns Dubencovs, Olga Stepanova, Elina Sproģe, Antons Cvetkovs, Rīga Technical University.
- **Discovery of new cancer-specific autoantibodies for early diagnostics of gastric cancer and forecasting progress of the disease.** LAS Corresponding Member Aija Linē, *Dr.biol.* Karina Siliņa, *Dr.biol.* Pāvels Zajakovs, *Dr.biol.* Zane Kalniņa, Irēna Meistere, Angelina Pismennaja, Latvian Biomedical Research and Study Centre; LAS Corresponding Member Mārcis Leja, Guntis Ancāns, University of Latvia; in cooperation with the Otto von Guericke University Magdeburg, Germany.
  - **Discovery of the possibility for crystalising chalcogenide coatings for nanotechnology and nanoelectronics with the help of electron beams for application in electron lithography.** *Dr.phys.* Vjačeslavs Gerbreders, *Dr.phys.* Oksana Šimane, Daugavpils University; *Dr.phys.* Arnis Gulbis, Rīga Technical University.
  - **Breeding of the variety of the Japanese quince ‘Rasa’ for fruit production.** The yield capacity, cold resistance, non-thorny kind, big and easy to collect fruit, and the high-quality biochemical composition of the new variety along with the elaborated methods of fruit processing provides new opportunities for the development of farmsteads. *Dr.agr.* Silvija Ruisa, LAS Corresponding Member Dalija Segliņa, Latvia State Institute of Fruit-Growing.
  - **Accomplishment of a study on emigration trends and its driving forces in Latvia and Estonia between 2000–2010.** *Dr.math.* Mihails Hazans, University of Latvia.

### In 2013

#### *In the field of theoretical science:*

- **Outstanding results in the quantum computing theory.** LAS Full Member Andris Ambainis (LAS Grand Medal, Advanced Grant by the European

Research Council awarded to 300 top researchers in Europe), University of Latvia.

- **Comprehensive research conducted in the field of cell biology and in the investigation of the molecular basis of malignant tumours opening up fundamentally novel ways for cancer treatment.** LAS Full Member Jekaterina Ērenpreisa (Award of the Cabinet of Ministers of the Republic of Latvia in 2013), Latvian Biomedical Research and Study Centre.
- **Development of the theory of quantum pumps and its application in the field of nanoelectronics used in the key meteorological laboratories in Europe.** LAS Corresponding Member Vjačeslavs Kaščejevs (the only researcher from Eastern Europe to be nominated in the Young Scientists class of 2013 by the World Economic Forum), University of Latvia.
- **Accomplishment of a long-term study as part of a thematically united cycle of monographs on the culture of nations dwelling at the coastal area of the Baltic Sea, treating *sea* and its elements as an important part of the identity of people presented in the monograph *Jūra latviešu valodā un folklorā: etnolingvistiskais aspekts* [Sea in the Latvian Language and Folklore: Ethnolinguistic Aspect].** LAS Corresponding Member Benita Laumane, Liepāja University.

*In the field of practical applications:*

- **Accomplishment of chemical and experimental study of a new original cardioprotective drug candidate allowing to proceed with clinical trials of this substance.** LAS Full Member Maija Dambrova, *Dr.chem.* Solveiga Grinberga, LAS Full Member Ivars Kalviņš, *Dr.pharm.* Jānis Kūka, *Dr.pharm.* Edgars Liepiņš, *Dr.chem.* Daina Loža, *Dr.chem.* Einārs Loža, LAS Corresponding Member Osvalds Pugovičs, *Dr.pharm.* Reinis Vilšķersts, Latvian Institute of Organic Synthesis; *Dr.med.* Ilmārs Stonāns, Joint Stock Company „Grindeks”.
- **Development and introduction of new compositions of dietary supplements containing natural glycopeptides applicable in the field of oncology and virology.** *Dr.sc.ing.* Jevgēņijs Jermolajevs, Lilija Peškova, Guntis Vītols, *Dr.med.* Simona Doniņa, Augusts Kirhenšteins Institute of Microbiology and Virology of the Rīga Stradiņš University.

- **Accomplishment of the synthesis and study of organic glasses with original structure for application in photonics equipment.** LAS Corresponding Member Valdis Kokars, LAS Full Member Valdis Kampars, Kaspars Traskovskis, Elmārs Zariņš, Lauma Laipniece, Rīga Technical University; *Dr.phys.* Aivars Vembris, Andrejs Tokmakovs, LAS Corresponding Member Mārtiņš Rutkis, Institute of Solid State Physics of the University of Latvia.
- **Accomplishment of research on the mechanism of resistance shift in functional materials enabling the production of terabit memory.** LAS Full Member Juris Purāns, LAS Corresponding Member Aleksejs Kuzmins, LAS Full Member Jevgeņijs Kotomins, *Dr.phys.* Aleksandrs Kalinko, Institute of Solid State Physics of the University of Latvia.
- **Development of a new method of optical diagnostics and monitoring and production of devices for non-contact detection of cutaneous melanoma.** LAS Full Member Jānis Spīgulis, *Dr.phys.* Uldis Rubīns, *Dr.phys.* Edgars Kviesis-Kipge, and Oskars Rubenis, University of Latvia.
- **Compilation and publication of *Lielā ķīniešu – latviešu vārdnīca* [*The Big Chinese-Latvian Dictionary*] providing also vast commentary on the cultural history.** LAS *Dr.h.c.* Pēteris Pildegovičs, University of Latvia.
- **Accomplishment of a study on the biologically active substances in food-stuffs upon the application of the latest packing technologies in prepacking and storing ensuring high quality and safe period of use.** *Dr.sc.ing.* Evita Straumīte, *Dr.habil.sc.ing.* Lija Dukaļska, *Dr.sc.ing.* Sandra Muižniece-Brasava, Latvia University of Agriculture.

## MAJOR SCIENTIFIC EVENTS IN LATVIA, 2011–2013

- **17 February 2011.** Opening of the 26<sup>th</sup> volume of collected articles by the Commission of the Historians of Latvia titled *Okupācija, kolaborācija, pretošanās: vēsture un vēstures izpratne* [Occupation, Collaboration, Resistance: History and Perception].
- **9 March 2011.** International scientific conference „With a view from the outer space. 50 years since the first human space flight” was organised by the Pauls Stradiņš Museum of the History of Medicine and the Latvian Academy of Sciences, with participation of the Rīga-born cosmonaut Anatoly Solovyov and establishment of a live communication session with the cosmonaut Alexander Kaleri in the spacecraft. A report on the merits of the Rīga-born (1911) academician Mstislav Keldysh (President of the Academy of Sciences of the USSR) in the field of space research in connection with his centenary anniversary was presented by the LAS President Juris Ekmanis.
- **6–9 April 2011.** International conference “Functional Materials and Nanotechnologies” (FM&NT-2011) was held in Rīga.
- **15 April 2011.** Opening of the book on the 50 years of the Salaspils nuclear reactor in Latvia (1961–2011) by the company *Latvenergo*, with participation of around 100 former employees of the nuclear reactor. The opening statement was made by the LAS President Juris Ekmanis under the slogan „Latvia can do it!”
- **12–13 September 2011.** International Paul Walden symposium in organic chemistry.
- **16–17 September 2011.** The 1<sup>st</sup> Congress of Latvian Historians.
- **24–27 October 2011.** The Joint 3<sup>rd</sup> World Congress of Latvian Scientists and the 4<sup>th</sup> Congress of Lettonics „Science, Society, and National Identity”.
- **17–20 April 2012.** International conference “Functional Materials and Nanotechnologies” (FM&NT-2012, Rīga).
- **20–21 April 2012.** International Conference in Pharmacology “Targeting Cellular Regulatory Systems” was held in Rīga.
- **28 May – 1 June 2012.** The 17<sup>th</sup> International Conference on Mechanics of Composite Materials was held in Rīga.–

- **7–9 September 2012.** The International Medical Meeting was held in Rīga (IMM-Rīga2012) with a lecture by the Nobel Prize winner in medicine Professor Harald zur Hausen.
- **18–19 October 2012.** The 17<sup>th</sup> International Conference on the problems of environment and ecology EcoBalt 2012 was held in Rīga.
- **1 November 2012.** The 1<sup>st</sup> Congress of Baltic Microbiologists was held in Rīga.
- **21–22 February 2013.** International Scientific Conference “Baltic Languages: History and Actual Processes” to commemorate the 140<sup>th</sup> anniversary of academician Jānis Endzelīns was held in Rīga.
- **13–14 May 2013.** The 8<sup>th</sup> International Paul Walden symposium in organic chemistry was held at the Rīga Technical University.

In 2013, several events were dedicated to the 150<sup>th</sup> anniversary of the outstanding Latvian chemist Paul Walden (1863–1957) (included in the calendar of UNESCO celebrations): on **26 June 2013**, on the birthday of P. Walden, formal opening of the streets named after P. Walden in Rīga and in Valmiera was organised along with visits to P. Walden’s memorial sites and opening of the memorial plaque at the childhood home of P. Walden.

- **14–15 June 2013.** The International Medical Meeting (IMM-Rīga2013).
- **8–12 July 2013.** The 40<sup>th</sup> International Colloquium on Automata, Languages, and Programming (ICALP) of the European Association for Theoretical Computer Science (EATCS) was held in Rīga.
- **27 September 2013.** The Researchers’ Night events on the topic of water were organised in many research institutions in Latvia. Supported by the European Commission such events were simultaneously held in 35 countries. An interactive exhibition “What do we know about water?” organised by the French Institute in Latvia was open to the public at the Latvian Academy of Sciences until 12 October 2013.
- **28–30 October 2013.** The 5<sup>th</sup> Congress of Lettonics “Research on national identity: the work accomplished and still to be done” was held in Rīga.
- **10 December 2013.** Academic conference „Science–culture interaction in Latvia and in the world” was dedicated to Professor Jānis Stradiņš on the

occasion of his 80<sup>th</sup> anniversary. Professor Jānis Stradiņš is an outstanding scientist and the public figure, inspirer of the Third Awakening of Latvia.

On the occasion of Professor Stradiņš 80<sup>th</sup> birthday another scientific event of particular prominence was expert debate “Why contemporary scientists might wish to live in the age of Enlightenment?”, which was held earlier this year at Rundāle Palace Museum (4 October 2013).

As usual, excellent analytical papers were delivered by Professor Stradiņš at these conferences. On the occasion of the jubilee he was congratulated by the state’s leaders, Latvian scientists, and the general public.

- **December 2013.** Implementation of five state research programmes of the consecutive four-year cycle (2010–2013) has been successfully accomplished. One of the outputs of the programme “National identity” has been embodied in the four-volume academic collected articles *Latvieši un Latvija* [The Latvians and Latvia], which were positively received not only by peer scientists, but also by the Latvian society at large. This accomplishment has marked a new, higher standard with regard to research results in the field of humanities.



## OVERVIEW OF RESEARCH STRATEGY AND POLICY ISSUES IN LATVIA, 2011–2014

- **26 April 2011.** The National Reform Programme of Latvia for the implementation of the „EU 2020” strategy was adopted by the Cabinet of Ministers of the Republic of Latvia. The Programme provides for an increase in the total science funding to 1.5% of GDP by 2020.
- **26 April 2011.** A decision on the international evaluation of the Latvian science, public research organisations, science and innovation policy to be carried out in 2012 was taken by the government.
- **17 September 2011.** Extraordinary elections of the 11<sup>th</sup> Saeima (Parliament) and formation of a new government. The declaration of the newly formed government (on 25 October) envisaged the transfer of responsibility for innovation policy to the Ministry of Education and Science.
- **19 October 2011.** The Cabinet of Ministers took a decision on the elaboration of the National Development Plan for 2014–2020.
- **Throughout the year 2011.** Latvian scientists were getting ready for the next cycle of the EU Structural Funds (2014–2020), int. al. in cooperation with scientists from the neighbouring countries.
- **In 2012.** Notable changes were made in the structure of the Ministry of Education and Sciences, int. al. having a direct effect on the field of science with two departments joint into a single Department of Higher Education, Science, and Innovation.
- **In 2012.** Development of the Basic Guidelines for Science, Technological Development, and Innovation for 2014–2020 was launched.
- **In 2012.** For the first time international evaluation of fundamental and applied research projects to be funded by the Latvian Council of Science was undertaken by foreign experts. The majority of the 370 project applications submitted were assessed to be of high quality.
- **In 2012.** Year-round ongoing consultations between Latvian, Estonian, and Lithuanian scientists, starting with the trilateral meeting of representatives

from Latvia, Estonia, and Lithuania on the further development of research infrastructure in the Baltic region, were held on 18 January. On 8–9 February, a meeting of the secretariats of the Baltic academies of sciences initiated by the Latvian Academy of Sciences upon the proposition made by a task group of the Ministry of Education and Science was held at the LAS. The core topic of the meeting – establishment of the Baltic Innovative Research and Technology Infrastructure (BIRTI). A debate among the representatives from Latvia, Estonia, and Lithuania on the development of BIRTI was organised on 27 February in Rīga. It was followed by the conference “The innovation potential of Latvia in the context of the experience of the Baltic States”, which was held on May 10, and the presentation of the BIRTI project as well as the debate on science-industry cooperation models, which was organised on 16 November. The topic regarding the course of development of the BIRTI project was taken up by the Innovation and Research Subcommittee of the National Economy Committee of the Parliament of the Republic of Latvia on 6 December.

- **Throughout the year 2012.** Continued efforts were made by the Ministry of Education and Science, the Latvian Council of Science, and the Latvian scientists in getting ready for the next round of the EU’s common research budget and the EU Structural Funds (2014–2020) as well as for the next four-year cycle of national research priorities (2014–2017) stipulated by the Law on Research Activity of the Republic of Latvia.
- **20 December 2012.** National Development Plan for 2014–2020 was adopted by the Parliament of the Republic of Latvia. The Plan envisages that science funding shall reach 1.5% of GDP by 2020.
- **In 2013.** The year has been marked by several organisational activities of high relevance for the Latvian Academy of Sciences and the Latvian science as a whole:
  - The international assessment of science in Latvia;
  - Search for solutions with regard to the drastically reduced science budget of Latvia;
  - Getting ready for the next round of the EU’s common research budget and the EU Structural Funds (2014–2020), including the elaboration of the Smart Specialisation Strategy;

- Drafting of the Basic Guidelines for Science, Technological Development, and Innovation for 2014–2020;
- Setting of national research priorities for the next four-year cycle (2014–2017) and elaboration of new state research programmes, respectively.
- **6 February 2013.** A visiting meeting of the Parliamentary Commission on Education and Science at the Latvian Academy of Sciences.

The meeting was chaired by Professor Ina Druviete, Chair of the Education, Culture, and Science Commission of the Parliament. It was attended by the Minister of Education and Science PhD Roberts Ķīlis, department head Lauma Sika, leaders of the Latvian Trade Union of Education and Science Employees, directors of research institutes, and scientists. The Minister R. Ķīlis informed the meeting attendees of the fact that so far no increase in the science budget was envisaged. The agenda of the meeting covered issues regarding the funding and sustainable development of science in Latvia, resulting in a suggestion made by the Commission to increase science budget.

- **4 April 2013.** An open letter by the Latvian scientists addressed to the highest officials of Latvia, Andris Bērziņš, Solvita Ābolņiņa, and Valdis Dombrovskis, was discussed and approved at the LAS General Meeting.
- **9 May 2013.** The State President Andris Bērziņš received the LAS leadership and Senate members to discuss key topical issues in science. The LAS delegation asked the State President to take active role in changing the authorities attitude towards investing in science – to place a high budgetary priority on the sustainable science, higher education, and innovation policy in Latvia that is in accordance with the EU’s and Latvia’s development goals.
- **28 August 2013.** “On the allocation of funding\* for securing scientific and academic activity” was the title of a letter handed over to the Prime Minis-

---

\* The total state budget funding for R&D in Latvia in 2008 made up EUR 67.0 million, while in 2012 it only reached EUR 34.7 million. According to analysis, the target figure set in the National Development Plan, whereby R&D funding shall amount to 1.5% of GDP, is not to be reached. In 2013, this issue was in the focus of attention of the Latvian Academy of Sciences and other science-related organisations. Nevertheless, it is to be acknowledged that no progress has been reached in this domain over the year.

ter of the Republic of Latvia Valdis Dombrovskis on behalf of the Latvian scientists by the LAS President Ojārs Spāritis, the Chair of the Latvian Council of Science Andrejs Siliņš, and other leaders of research and higher education organisations of Latvia upon their meeting. Urgent issues in the field of science and potential solutions thereof were discussed.

- **20 January 2014.** The final draft Report on the Innovation System Review and Research Assessment prepared for the Ministry of Education and Science by the Technopolis group was completed.

The main conclusions and recommendations drawn from the international assessment of science in Latvia (excerpts from the draft assessment document):

- Building modern and sustainable economy is impossible without making a significant expenditure on research and higher education. The failure of successive governments to invest in research and development results in too small supply of high-quality human resources to society and industry. Lack of human capital has negative effect on exploiting both own knowledge and more than 99% of new knowledge that is generated abroad.
- Institutional funding should be more like 50% than the current 17% of university research income. Performance-based institutional funding should be paid to the institutions, not to the research groups that generate the performance, in order to provide the institutions with the means to implement strategy.
- Human resources are a problem. To achieve inflow of young and talented researchers requires improved understanding of research leadership and management as well as funding and internal career incentives that support development, including funding for young researchers and postdoctoral researchers.
- Teaching and research should be brought more closely together. For a small country it is difficult to coherently maintain parallel university and institute systems with critical mass. In order to have a robust research-based teaching system the two elements need to be merged or, at the very least, to be closely integrated.
- Incentives for both teaching and research in the Latvian system encourage fragmentation, which is the opposite of what is necessary in a small

country. The capabilities of stronger research units should be used to lead the way towards fewer centres, which should have critical mass and a meaningful international profile.

- More internationalism is needed. That requires recruitment and career development incentives that are more orientated to the international research community and not least to publication in international, peer-reviewed English-language journals.
- The disciplinary coverage of Latvian research is broadly good: there is at least some competence in most subjects.
- The formation of larger centres and groups, through centre funding and the provision of large as well as small research grants, should be supported.
- Strengthening the links between applied research and industrial development needs organisational improvements. Bringing the innovation and research funding functions together in a single agency could be a useful move in Latvia.
- The role of the Latvian Academy of Sciences in promoting research and the public understanding of science should be strengthened. The Academy of Sciences should focus its mission on increasing the profile and legitimacy of Latvian science.
- **21 January 2014.** The government took note of the informative report on the international assessment of science in Latvia submitted by the Ministry of Education and Science and charged the Ministry with the task to submit, by 1 July 2014, to the Cabinet of Ministers for consideration of an informative report on the structural reforms in the field of science in Latvia to be implemented until 1 July 2015.
- **22 January 2014.** The Ministry is lead by the LAS Corresponding Member Ina Druviete, previously having chaired the Parliamentary Commission of Education, Culture, and Science, and prior to that having taken the office of the Minister of Education and Science (December 2004 – April 2006).  
Over the course of the last three years, there has been a threefold change in the leadership of the Ministry of Education and Science.
- **18 February 2014.** The LAS Senate meeting of the Latvian Academy of Sciences discussed evaluation of research institutes in Latvia carried out by

the Technopolis Group, the shortcomings in the preparation and implementation stage of the assessment process as well as in the interpretation of the results, along with the fact that the press conference on the evaluation results was organised two weeks prior to presenting those to scientists themselves. The meeting also addressed the lessons to be learnt from the process and results of such an international assessment by research institutes and scientists, including the need for more active publishing efforts in international journals and for better presentation of one's activity and research results.

# **PRESIDIUM, SENATE, BOARD, COUNCILS, COMMISSIONS**

*President* **Ojārs SPĀRĪTIS**

*Secretary* Dace GOVINČUKA

Tel.: (371) 67225361. Fax: (371) 67821153. E-mail: lza@lza.lv

## **PRESIDIUM**

**Ojārs SPĀRĪTIS**, President

**Juris EKMANIS**, Vice President

**Tālavš JUNDZIS**, Vice President

**Jānis STRADIŅŠ**, Chair of the Senate

**Valdis KAMPARS**, Secretary General

**Juris JANSONS**, Chair of the Division of Physical and Technical Sciences

**Raimonds VALTERS**, Chair of the Division of Chemical, Biological, and Medical Sciences

**Raita KARNĪTE**, Chair of the Division of Humanities and Social Sciences

**Baiba RIVŽA**, Chair of the Division of Agriculture and Forestry Sciences

**Andrejs SILIŅŠ**, Foreign Secretary

**Jānis KRISTAPSONS**, Adviser to President

## **SENATE**

*Chair* **Jānis STRADIŅŠ**

Tel.: (371) 67213663, (371) 67555985. Fax: (371) 67821153. E-mail: stradins@lza.lv

*Scientific Secretary* **Alma EDŽIŅA**

Tel.: (371) 67223931. Fax: (371) 67821153. E-mail: alma@lza.lv

*Members of the Senate*

**Mārcis AUZIŅŠ**

Tel. (371) 67034301. Fax: (371) 67034301. E-mail: marcis.auzins@lu.lv; rektors@lu.lv

**Jānis BĒRZIŅŠ**, Chair of the Fund of the Academy

Tel.: (371) 67034509, (371) 28754810. E-mail: j.beerzinsh@gmail.com

**Juris BORZOVŠ**

Tel.: (371) 67034490, (371) 29257530. E-mail: juris.borzovs@lu.lv

**Juris EKMANIS**, Vice President

Tel.: (371) 67223644, (371) 67552011, (371) 29233023. E-mail: ekmanis@lza.lv

**Elmārs GRĒNS**

Tel.: (371) 67808201. E-mail: grens@biomed.lu.lv

**Viktors HAUSMANIS**

Tel.: (371) 67357910. E-mail: litfom@lza.lv

**Ilga JANSONE**

Tel./Fax: (371) 67227696. Tel.: (371) 29550647. E-mail: ilgajan@lza.lv

**Juris JANSONŠ**, Chair of the Division of Physical and Technical Sciences

Tel.: (371) 29284330. E-mail: jansons@pmi.lv; fizteh@lza.lv

**Tālavš JUNDZIS**, Vice President

Tel./Fax: (371) 67227555. Tel.: (371) 29489249. E-mail: bspc@lza.lv

**Ivars KALVIŅŠ**

Tel.: (371) 67014800, (371) 67553233. E-mail: kalvins@osi.lv

**Valdis KAMPARS**, Secretary General

Tel.: (371) 67225361, (371) 29230958. E-mail: kampars@ktf.rtu.lv; lza@lza.lv

**Raita KARNĪTE**, Chair of the Division of Humanities and Social Sciences

Tel.: (371) 29411607. E-mail: raita@epc.lv

**Jānis KLOVIŅŠ**

Tel.: (371) 67808003. E-mail: klovins@biomed.lu.lv

**Vija KLUŠA**

Tel.: (371) 29276263, (371) 67033888. E-mail: vijaklus@latnet.lv

**Māris KĻAVIŅŠ**

Tel.: (371) 67334096. E-mail: mklavins@lanet.lv



**Ivars KNĒTS**

Tel.: (371) 67089340, (371) 29199301. E-mail: ivars.knets@rtu.lv

**Māris KNITE**

Tel.: (371) 67089181. E-mail: knite@latnet.lv

**Tatjana KOĶE**

Tel.: (371) 67061558. E-mail: Tatjana.Koke@rsu.lv

**Maija KŪLE**

Tel.: (371) 28385810. E-mail: fsi@lza.lv

**Ivars LĀCIS**

Tel.: (371) 67261068. E-mail: Ivars.Lacis@lu.lv

**Dace MARKUS**

Tel.: (371) 67808010, (371) 26442598. E-mail: rpiva@rpiva.lv; markus@latnet.lv

**Tālis MILLERS**

Tel.: (371) 67225361. E-mail: talism@inbox.lv

**Baiba RIVŽA**, Chair of the Division of Agriculture and Forestry Sciences

Tel.: (371) 63023739, (371) 29254469. E-mail: baiba.rivza@llu.lv

**Andrejs SILIŅŠ**, Foreign Secretary

Tel.: (371) 67211405. E-mail: silins@lza.lv

**Ojārs SPĀRĪTIS**, LAS President

Tel.: (371) 67225361. E-mail: lza@lza.lv

**Pēteris ŠĪPKOVŠ**

Tel.: (371) 67553537. E-mail: shipkovs@edi.lv

**Arnīs TREIMANIS**

Tel.: (371) 67551559, (371) 29258122. E-mail: arnis.treimanis@edi.lv

**Raimonds VALTERS**, Chair of the Division of Chemical, Biological, and Medical Sciences

Tel.: (371) 67220725, (371) 67089231. E-mail: rvalters@latnet.lv

**Guntis ZEMĪTIS**

Tel.: (371) 67034509, (371) 26416884. E-mail: guntis.zemitis@gmail.com.

## BOARD

*Chair* **Valdis KAMPARS**, Secretary General

*Vice Chair* **Raimonds VALTERS**, Chair of the Division of Chemical, Biological, and Medical Sciences

*Members of the Board*

**Jānis BĒRZIŅŠ**, Chair of the Fund of the Academy

**Juris EKMANIS**, Vice President

**Juris JANSONS**, Chair of the Division of Physical and Technical Sciences

**Raita KARNĪTE**, Chair of the Division of Humanities and Social Sciences

**Baiba RIVŽA**, Chair of the Division of Agriculture and Forestry Sciences

## SUPERVISORY COUNCIL

*Chair* **Juris KRŪMIŅŠ**

Tel.: (371) 67034794. E-mail: Juris.Krumins@lu.lv

*Members of the Council*

**Jānis Guntis BĒRZIŅŠ**

Tel.: (371) 67261304. E-mail: jberzins@latnet.lv

**Gunārs DUBURS**

Tel.: (371) 67014946. E-mail: gduburs@osi.lv

**Daina KĀRKLIŅA**

Tel.: (371) 63005690. E-mail: Daina.Karklina@llu.lv

**Ārija MEIKALIŠA**

Tel.: (371) 20046013. E-mail: arija.meikalisa@lu.lv

**Andris OZOLS**

Tel.: (371) 67089456. E-mail: aozols@latnet.lv

**Nikolajs VEDERŅIKOVŠ**

Tel.: (371) 67553760. E-mail: ved@edi.lv

## COMMISSIONS, COUNCILS

### Terminology Commission

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel.: (371) 67225879. E-mail: konsultacija@valoda.lv  
<http://termini.lza.lv>

*Chair* Juris BALDUNČIKS, *Dr.philol.*

### Ethics Committee of the LAS and the Latvian Council of Science

Akadēmijas laukums 1, Rīga LV 1050, Latvia  
Tel.: (371) 28385810. E-mail: fsi@lza.lv

*Head* Maija KŪLE, full mem. LAS, *Dr.habil.phil.*

### State Commission of Scientific Qualification

Akadēmijas laukums 1, Rīga LV 1050, Latvia  
Tel.: (371) 67223931. Fax: (371) 67821153. E-mail: alma@lza.lv

*Chair* Raimonds VALTERS, full mem. LAS, *Dr.habil.chem.*

*Scientific Secretary* Alma EDŽIŅA, *Dr.chem.*

### Council of State Emeritus Scientists

Akadēmijas laukums 1, Rīga LV 1050, Latvia  
Tel.: (371) 67220725. Fax: (371) 67821153. E-mail: chem@lza.lv

*Chair* Raimonds VALTERS, full mem. LAS, *Dr.habil.chem.*

*Scientific Secretary* Baiba ĀDAMSONE, *Dr.chem.*

## SCIENTIFIC DIVISIONS OF THE ACADEMY

### DIVISION OF PHYSICAL AND TECHNICAL SCIENCES

Akadēmijas laukums 1, Rīga, LV 1050, Latvia

Tel.: (371) 67223633 Fax: (371) 67821153

E-mail: fizteh@lza.lv

Board of the Division

*Chair of the Division* Juris JANSONS

*Vice Chair of the Division* Māris KNITE

*Scientific Secretary* Sofja NEGREJEVA

The Division unites 105 LAS members, among them 39 full, 5 honorary, 25 foreign, and 36 corresponding members.

The Division has conferred the title of *Dr. honoris causa* to 18 scientists.

#### MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

##### **Astronomy**

Māris Ābele, cor.mem

Edgars Bervalds, cor.mem.

Juris Žagars, cor.mem.

Dainis Draviņš, for.mem.

Leonīds Novickis, cor.mem.

Uldis Sukovskis, cor.mem.

Pēteris Videnieks, cor.mem.

Jāzeps Ločmelis, hon.mem.

Jānis Osis, hon.mem.

##### **Computer Science**

Andris Ambainis, full mem.

Jānis Bārzdiņš, full mem.

Ivars Biļinskis, full mem.

Jānis Grundspenķis, full mem.

Guntis Bārzdiņš, cor.mem.

Juris Borzovs, cor.mem.

Kārlis Čerāns, cor.mem.

Jānis Grabis, cor.mem.

Modris Greitāns, cor.mem.

Igors Kabaškins, cor.mem.

Audris Kalniņš, cor.mem.

Jurijs Merkurjevs, cor.mem.

Gilles Brassard, for.mem.

Alvis Brāzma, for.mem.

Juris Hartmanis, for.mem.

Andris Padegs, for.mem.

##### **Engineering**

Ralejs Teffers, for.mem.

Vilis Vītols, hon.mem.

##### **Informatics (Science of Science)**

Jānis Kristapsons, cor.mem.

##### **Mathematics**

Andris Buiķis, full mem.

Rūsiņš Mārtiņš Freivalds, full mem.

Agnis Andžāns, cor.mem.  
 Andrejs Reinfelds, cor.mem.  
 Felikss Sadirbajevs, cor.mem.  
 Aleksandrs Šostaks, cor.mem.  
 Aivars Zemītis, cor.mem.  
 Raimondas Čiegis, for.mem.

### **Mechanics**

Juris Jansons, full mem.  
 Ivars Knēts, full mem.  
 Egons Lavendelis, full mem.  
 Imants Matīss, full mem.  
 Rolands Rikards, full mem.  
 Kārlis Rocēns, full mem.  
 Vitauts Tamužs, full mem.  
 Gundaris Teters, full mem.  
 Jānis Auziņš, cor.mem.  
 Andris Čāte, cor.mem.  
 Vladimirs Kašjanovs, cor.mem.  
 Andrejs Krasņikovs, cor.mem.  
 Roberts Maksimovs, cor.mem.  
 Jānis Rudzītis, cor.mem.  
 Narimants Salenieks, cor.mem.  
 Jānis Vība, cor.mem.  
 Jānis Dundurs, for.mem.  
 Jūri Engelbrecht, for.mem.  
 René Moreau, for.mem.

### **Physics**

Mārcis Auziņš, full mem.  
 Jānis Guntis Bērziņš, full mem.  
 Elmārs Blūms, full mem.  
 Andrejs Cēbers, full mem.  
 Jurijs Dehtjars, full mem.  
 Oļģerts Dumbrājs, full mem.  
 Juris Ekmanis, full mem.  
 Ruvins Ferbers, full mem.  
 Agris Gailītis, full mem.  
 Jevgeņijs Kotomins, full mem.  
 Māris Knite, full mem.  
 Andris Krūmiņš, full mem.

Ivars Lācis, full mem.  
 Oļģerts Lielausis, full mem.  
 Andris Ozols, full mem.  
 Juris Purāns, full mem.  
 Andrejs Siliņš, full mem.  
 Linards Skuja, full mem.  
 Jānis Spīgulis, full mem.  
 Andris Šternbergs, full mem.  
 Kurts Švarcs, full mem.  
 Ivars Tāle, full mem.  
 Juris Zaķis, full mem.  
 Imants Bērsons, cor.mem.  
 Donāts Erts, cor.mem.  
 Jevgeņijs Joļins, cor.mem.  
 Vjačeslavs Kaščejevs, cor.mem.  
 Aleksejs Kuzmins, cor.mem.  
 Mārtiņš Rutkis, cor.mem.  
 Jūras Banys, for.mem.  
 Herman Branover, for.mem.  
 Niels Egede Christensen, for.mem.  
 Till von Egidy, for.mem.  
 Roberts Evarestovs, for.mem.  
 Paul Albert Janmey, for.mem.  
 Marco Kirm, for.mem.  
 Aleksandr Lushchik, for.mem.  
 Ivars Melngailis, for.mem.  
 Jānis Melngailis, for.mem.  
 Jacques Simon, for.mem.  
 Pauls Stradiņš, for.mem.  
 Juris Pēteris Svenne, for.mem.  
 Aleksandrs Šļugers, for.mem.  
 Juris Upatnieks, for.mem.

### **Power Engineering**

Leonids Ribickis, full mem.  
 Pēteris Šipkovs, full mem.  
 Andris Krēšliņš, cor.mem.  
 Antans Sauļus Sauhats, cor.mem.  
 Viktors Zēbergs, hon.mem.  
 Namejs Zeltiņš, hon.mem.

## DIVISION OF CHEMICAL, BIOLOGICAL, AND MEDICAL SCIENCES

Akadēmijas laukums 1, Rīga, LV 1050, Latvia

Tel.: (371) 67220725. Fax: (371) 67821153

E-mail: chem@lza.lv

Board of the Division

*Chair of the Division* Raimonds VALTERS

*Vice Chairs of the Division* Gunārs DUBURS

Vija KLUŠA

*Scientific Secretary* Baiba ĀDAMSONE

The Division unites 119 LAS members, among them 45 full, 2 honorary, 27 foreign, and 45 corresponding members.

The Division has conferred the title of *Dr. honoris causa* to 27 scientists.

### MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

#### **Agricultural Sciences**

Aleksandrs Jemeljanovs, full mem.

Aldis Kārklīņš, full mem.

Edīte Birģele, cor.mem.

Jānis Latvietis, hon.mem.

Tatjana Kozlovska, cor.mem.

Imants Liepa, cor.mem.

Aija Linē, cor.mem.

Viesturs Melecis, cor.mem.

Aleksandrs Rapoportš, cor.mem.

#### **Biology**

Arvīds Barševskis, full mem.

Jekaterina Ērenpreisa, full mem.

Elmārs Grēns, full mem.

Jānis Kloviņš, full mem.

Rihards Kondratovičš, full mem.

Indriķis Muižnieks, full mem.

Pauls Pumpēns, full mem.

Īzaks Rašals, full mem.

Nikolajs Sjakste, full mem.

Jānis Viksne, full mem.

Uldis Kalnenieks, cor.mem.

Maija Rukliša, cor.mem.

Gunta Sprīņģe, cor.mem.

Kaspars Tārs, cor.mem.

Henriks Zenkevičš, cor.mem.

Māris Hartmanis, for.mem.

Vitauts Kalniņš, for.mem.

Uldis Streips, for.mem.

Richard VILLEMS, for.mem.

Kurt WÜTHRICH, for.mem.

#### **Biotechnology**

Mārtiņš Beķers, full mem.

Andrejs Daugulis, for.mem.

## **Chemistry**

Gunārs Čipēns, full mem.  
 Gunārs Duburs, full mem.  
 Mārtiņš Kalniņš, full mem.  
 Ivars Kalviņš, full mem.  
 Valdis Kampars, full mem.  
 Ēriks Kupče, full mem.  
 Edvards Liepiņš, full mem.  
 Tālis Millers, full mem.  
 Uldis Sedmalis, full mem.  
 Jānis Stradiņš, full mem.  
 Andris Strakovs, full mem.  
 Arnis Treimanis, full mem.  
 Raimonds Valters, full mem.  
 Nikolajs Vederņikovs, full mem.  
 Grigorijs Veinbergs, full mem.  
 Andris Zicmanis, full mem.  
 Edgars Ābele, cor.mem.  
 Aigars Jirgensons, cor.mem.  
 Māra Jure, cor.mem.  
 Valerjans Kauss, cor.mem.  
 Valdis Kokars, cor.mem.  
 Aivars Krauze, cor.mem.  
 Osvalds Pugovičs, cor.mem.  
 Edgars Sūna, cor.mem.  
 Pēteris Trapencieris, cor.mem.  
 Māris Turks, cor.mem.  
 Pēteris Bolšaitis, for.mem.  
 Nicodemus E. Boyer, for.mem.  
 Olafs Daugulis, for.mem.  
 Benediktas Juodka, for.mem.  
 Georgs Pauls Kreišmanis, for.mem.  
 Arnis Kuksis, for.mem.  
 Gottfried Otting, for.mem.

Edvīns Vedējs, for.mem.  
 Regina Žuka, for.mem.

## **Ecology, Environmental Science**

Pēteris Cimdiņš, full mem.  
 Māris Kļaviņš, full mem.  
 Tālis Juhna, cor.mem.  
 Aija Melluma, cor.mem.

## **Forestry**

Pēteris Zālītis, cor.mem.

## **Geography**

Guntis Eberhards, cor.mem.  
 Zaiga Krišjāne, cor.mem.  
 Oļģerts Nikodemus, cor.mem.  
 Edmunds Bunkše, for.mem.

## **Geology and Water Management**

Ervīns Lukševičs, cor.mem.  
 Vitālijs Zelčs, cor.mem.

## **History of Science**

Yuri Solovyov, for.mem.

## **Materials Science**

Bruno Andersons, full mem.  
 Jānis Grabis, full mem.  
 Jānis Grāvītis, cor.mem.  
 Elsa Reichmanis, for.mem.

## **Medicine**

Georgs Andrejevs, full mem.  
 Dace Gardovska, full mem.  
 Jānis Gardovskis, full mem.  
 Viktors Kalnbērzs, full mem.  
 Vija Kluša, full mem.  
 Ruta Muceniece, full mem.  
 Modra Murovska, full mem.  
 Jānis Priedkalns, full mem.

Rafails Rozentāls, full mem.  
 Arnis Viksna, full mem.  
 Jānis Volkolākovs, full mem.  
 Igors Aksiks, cor.mem.  
 Andrejs Ērglis, cor.mem.  
 Andris Ferdats, cor.mem.  
 Dainis Krieviņš, cor.mem.  
 Mārcis Leja, cor.mem.  
 Sandra Lejniece, cor.mem.  
 Aivars Lejnieks, cor.mem.  
 Alfrēds Miltiņš, cor.mem.  
 Māra Pilmane, cor.mem.  
 Valdis Pīrāgs, cor.mem.  
 Ingrīda Rumba-Rozenfelde, cor.mem.  
 Andrejs Skaģers, cor.mem.

Uldis Vikmanis, cor.mem.  
 Ludmila Viksna, cor.mem.  
 Aija Žilēviča, cor.mem.  
 Kristaps Juris Keggi, hon.mem.  
 Meinhard Classen, for.mem.  
 Harald zur Hausen, for.mem.  
 Jānis Kļaviņš, for.mem.  
 Ruta Kundziņa, for.mem.  
 Andreas Oksche, for.mem.  
 Felix Unger, for.mem.  
 Jarl Wikberg, for.mem.  
 Bertrams Zariņš, for.mem.  
 Kristaps Zariņš, for.mem.

**Pharmacology**

Maija Dambrova, full mem.



## DIVISION OF HUMANITIES AND SOCIAL SCIENCES

Akadēmijas laukums 1, Rīga, LV 1050, Latvia

Tel.: (371) 67225889 Fax: (371) 67821153

E-mail: humana@lza.lv

Board of the Division

*Chair of the Division* Raita KARNĪTE

*Vice Chair of the Division* Juris URTĀNS

*Scientific Secretary* Ilga TĀLBERGA

The Division unites 155 LAS members, among them 34 full, 49 honorary, 39 foreign, and 33 corresponding members.

The Division has conferred the title of *Dr. honoris causa* to 31 scientists.

### MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

#### **Anthropology**

Raisa Denisova, hon.mem.

#### **Archaeology**

Andris Caune, full mem.

Ēvalds Mugurēvičs, full mem.

Ieva Ose, full mem.

Ilze Biruta Loze, cor.mem.

Andrejs Vasks, cor.mem.

Guntis Zemītis, cor.mem.

#### **Architecture**

Jānis Krastiņš, full mem.

Gunārs Asaris, hon.mem.

Andris Kronbergs, hon.mem.

Gunārs Birkerts, for.mem.

#### **Art**

Biruta Baumannē, hon.mem.

Ilmārs Blumbergs, hon.mem.

Uldis Dumpis, hon.mem.

Maija Einfelde, hon.mem.

Guntis Gailītis, hon.mem.

Alvis Hermanis, hon.mem.

Imants Kalniņš, hon.mem.

Gidons Krēmērs, hon.mem.

Aleksejs Naumovs, hon.mem.

Andris Nelsons, hon.mem.

Jānis Andris Osis, hon.mem.

Raimonds Pauls, hon.mem.

Jāzeps Pigoznis, hon.mem.

Indulis Ojārs Ranka, hon.mem.

Māris Sirmāis, hon.mem.

Džemma Skulme, hon.mem.

Jānis Streičs, hon.mem.

Jānis Strupulis, hon.mem.

Pēteris Vasks, hon.mem.

Andris Vārpa, hon.mem.

Kārlis Zariņš, hon.mem.

Uldis Zemzaris, hon.mem.

Ernst Neizvestny, for.mem.

**Art Studies**

Ojārs Spārītis, full mem.  
Silvija Radzobe, cor.mem.

**Bibliography**

Andris Vilks, hon.mem.  
Jānis Krēsliņš, for.mem.

**Demography**

Juris Krūmiņš, full mem.  
Pārsla Eglīte, cor.mem.

**Economics**

Arnīs Kalniņš, full mem.  
Raita Karnīte, full mem.  
Oļģerts Krastiņš, full mem.  
Baiba Rivža, full mem.  
Edvīns Vanags, full mem.  
Pēteris Zvidriņš, full mem.  
Konstantīns Didenko, cor.mem.  
Imants Kirtovskis, cor.mem.  
Uldis Osis, cor.mem.  
Remigijš Počs, cor.mem.  
Inna Šteinbuka, cor.mem.  
Pēteris Guļāns, hon.mem.  
Valdis Jākobsons, hon.mem.  
Nikolajs Balabkins, for.mem.  
Gundars Ķeniņš-Kings, for.mem.

**Ethnology**

Saulvedis Cimermanis, full mem.

**History**

Jānis Bērziņš, full mem.  
Valdis Bērziņš, full mem.  
Inesis Feldmanis, full mem.  
Aivars Stranga, full mem.  
Ilga Apine, cor.mem.  
Anna Jurkāne, hon.mem.  
Norbert Angermann, for.mem.  
Friedrich Benninghoven, for.mem.

Andrievs Ezergailis, for.mem.  
Erwin Oberländer, for.mem.  
Gert von Pistohlkors, for.mem.  
Andrejs Plakans, for.mem.  
Enn Tarvel, for.mem.  
Eberhard Winkler, for.mem.

**History of Art**

Jānis Zilgalvis, full mem.  
Imants Lancmanis, hon.mem.

**History of Culture**

Juris Tāivaldis Urtāns, full mem.  
Vyacheslav Ivanov, for.mem.

**History of Science**

Anto Leikola, for.mem.

**Journalistics**

Oskars Gerts, hon.mem.

**Law**

Juris Bojārs, full mem.  
Kalvis Torgāns, full mem.  
Ringolds Balodis, cor.mem.  
Ārija Meikališa, cor.mem.  
Andris Plotnieks, cor.mem.  
Erki Hollo, for.mem.

**Linguistics**

Aina Blinkena, full mem.  
Ilga Jansone, full mem.  
Dace Markus, full mem.  
Valentīna Skujiņa, full mem.  
Andrejs Veisbergs, full mem.  
Brigita Bušmane, cor.mem.  
Ina Druviete, cor.mem.  
Benita Laumane, cor.mem.  
Daina Nītiņa, cor.mem.  
Anna Stafecka, cor.mem.  
Jānis Valdmanis, cor.mem.

Tõnu Karma, hon.mem.  
 Aleksey Andronov, for.mem.  
 Dzintra Bonda, for.mem.  
 Michael Branch, for.mem.  
 Pietro U. Dini, for.mem.  
 Trevor Fennell, for.mem.  
 Tomass Gamkrelidze, for.mem.  
 Baiba Metuzāle-Kangere, for.mem.  
 Algirdas Sabaliauskas, for.mem.  
 Lembit Vaba, for.mem.  
 Zigmās Zinkevičius, for.mem.

### **Literary Criticism**

Viktors Hausmanis, full mem.  
 Viktors Ivbulis, full mem.  
 Benedikts Kalnačs, full mem.  
 Janīna Kursīte-Pakule, full mem.  
 Vera Vāvere, full mem.  
 Maija Burima, cor.mem.  
 Ausma Cimdiņa, cor.mem.  
 Fjodors Fjodorovs, cor.mem.  
 Māra Grudule, cor.mem.  
 Rolfs Ekmanis, for.mem.  
 Lalita Muižniece, for.mem.  
 Valters Nollendorfs, for.mem.  
 Radegast Parolek, for.mem.  
 Juris Silenieks, for.mem.  
 Friedrich Scholz, for.mem.  
 Jana Tesařová, for.mem.

### **Literature**

Alberts Bels, hon.mem.  
 Uldis Bērziņš, hon.mem.  
 Leons Briedis, hon.mem.  
 Roalds Dobrovenskis, hon.mem.  
 Guntars Godiņš, hon.mem.  
 Dainis Īvāns, hon. mem.  
 Juris Kronbergs, hon.mem.

Jānis Peters, hon.mem.  
 Valdis Rūmnieks, hon.mem.  
 Knuts Skujenieks, hon.mem.  
 Zigmunds Skujiņš, hon.mem.  
 Tomass Tranströmer, hon.mem.  
 Māra Zālite, hon.mem.  
 Anna Žīgure, hon.mem.

### **Pedagogy**

Tatjana Koķe, cor.mem.

### **Philosophy**

Maija Kūle, full mem.  
 Andris Rubenis, cor.mem.  
 Igors Šuvajevs, cor.mem.  
 Ivans Vedins, cor.mem.  
 John Talivaldis Ozolins, for.mem.  
 Arvīds Ziedonis, for.mem.

### **Political Studies**

Tālavs Jundzis, full mem.  
 Jānis Ikstens, cor.mem.  
 Artis Pabriks, cor.mem.  
 Aina Nagobads-Ābola, hon.mem.  
 Juris Dreifelds, for.mem.  
 Jānis Peniķis, for.mem.  
 Rasma Šilde-Kārkliņa, for.mem.

### **Psychology**

Solveiņa Miezīte, for.mem.

### **Psychology, Folklore Studies**

Vaira Viķe-Freiberga, full mem.  
 Valdis Muktupāvels, cor.mem.

### **Sociology**

Aivars Tabuns, cor.mem.  
 Tālis Tisenkopfs, cor.mem.

### **Theology**

Juris Rubenis, hon.mem.  
 Zbigņevs Stankevičs, hon.mem.

## DIVISION OF AGRICULTURE AND FORESTRY SCIENCES

Akadēmijas laukums 1, Rīga, LV 1050, Latvia

Tel.: (371) 67223448 Fax: (371) 67821153

E-mail: lmzn@lza.lv

Board of the Division

*Chair of the Division* Baiba RIVŽA

*Deputy Chair of the Division* Arnis TREIMANIS

*Scientific Secretary* Kristine POLAČENKO

The Division currently unites 28 LAS members, among them 11 full, 2 honorary, 1 foreign, and 14 corresponding members. In its activities the Division has involved 4 Doctors *honoris causa*.

### MEMBERS OF THE DIVISION AND THEIR FIELD OF SPECIALISATION

#### **Agriculture and Processing Technologies**

Aleksandrs Jemeljanovs, full mem.

Edīte Kaufmane, full mem.

Aldis Kārklīšs, full mem.

Edīte Birģele, cor.mem.

Inga Ciproviča, cor.mem.

Zinta Gaile, cor.mem.

Daina Kārklīņa, cor.mem.

Dalija Segliņa, cor.mem.

Ilze Skrabule, cor.mem.

Juris Skujāns, cor.mem.

Jānis Latvietis, hon.mem.

#### **Biology and Biotechnology**

Mārtiņš Beģers, full mem.

Īzaks Rašāls, full mem.

#### **Economics**

Arnīs Kalniņš, full mem.

Oļģerts Krastiņš, full mem.

Baiba Rivģa, full mem.

Irīna Pilvere, cor.mem.

#### **Forestry Science and Wood Technologies**

Bruno Andersons, full mem.

Arnīs Treimanis, full mem.

Nikolajs Vederņikovs, full mem.

Tatjana Diģbite, cor.mem.

Tālis Gaitnieks, cor.mem.

Imants Liepa, cor.mem.

Dainīs Edgars Ruņģis, cor.mem.

Pēteris Zālītis, cor.mem.

Aivars Žūriņš, cor.mem.

Oscar Faix, for.mem.

#### **Art**

Arta Dumpe, hon.mem.

## MEETINGS OF THE ACADEMY (1 JUNE 2011 – 15 MARCH 2014)

2 June 2011: Regular/visiting meeting at the Turaida Museum Reserve, “Historic centres as historical sources in the preservation of the cultural heritage”

21 June 2011: Senate Meeting

- Scientific presentation “Hyperdimensions, parallel receivers, compressive detecting, and afterglow observation in NMR spectroscopy” given by LAS Corresponding Member Ēriks Kupče
- Scientific presentation “Accomplishments, problems, and perspectives in research on the 20<sup>th</sup> century history of Latvia” given by LAS Corresponding Member Guntis Zemītis, *Dr.hist.* Irēna Šneidere
- Scientific presentation “Research on social history of the 20<sup>th</sup> century interwar Latvia: aspects of sexuality and morality” given by *Dr.hist.* Ineta Lipša

25–26 August 2011: conference in the town of Alūksne, “Issues of cultural history of the Alūksne district”

13 September 2011: Senate Meeting

- Scientific presentation “Large-scale computer modelling of the properties of important technological materials from the first principles” given by LAS Corresponding Member Jevgeņijs Kotomins

4 October 2011: Senate Meeting

- Scientific presentation “Fundamental and applied research in fruit plant breeding, in the development of innovative growing and processing technologies” given by LAS Corresponding Member Edīte Kaufmane
- Scientific presentation “Inspection of the world fauna of the Notiophilus genus of ground beetles” given by LAS Corresponding Member Arvīds Barševskis

12 October 2011: Regular meeting “Man – Religion – Science: Insight into the human evolution and modern society”. Academic lecture delivered by LAS Full Member Kurts Švarcs

24–27 October 2011: Joint 3<sup>rd</sup> World Congress of Latvian scientists and the 4<sup>th</sup> Congress of Lettonics “Science, Society, and National Identity”

8 November 2011: Senate Meeting

- Scientific presentation “Review of the main areas of scientific activity” given by LAS Corresponding Member Juris Urtāns
- Scientific presentation “Where to and how does the criminal procedure lead? Justice as an outcome and as a basic claim” given by LAS Corresponding Member Ārija Meikališa
- Scientific presentation “Investigation of the Latvian architecture heritage from the 18<sup>th</sup> century to the early 20<sup>th</sup> century” given by LAS Corresponding Member Jānis Zilgalvis

#### **24 November 2011: Autumn General Meeting**

- Opening speech “What will the condition of Latvia and science be beyond 2013?” given by the LAS President Juris Ekmanis
- Academic lecture “Earliest information on the Baltic nations from written historical sources” delivered by winner of the LAS Grand Medal, LAS Full Member Ēvalds Mugurēvičs
- Elections of new LAS members

13 December 2011: Senate Meeting

- Presentation “Results of the state research programme in power engineering” given by LAS Full Member Juris Ekmanis
- Speech “Prospects of the development of science in Europe and Latvia” given by the Chair of the Latvian Council of Science Andrejs Siliņš

17 January 2012: Senate Meeting

- Scientific presentation “Experience with the 7FP Project “Quantum Computer Science” given by LAS Full Member Andris Ambainis
- Account of the achievements of the Latvian science in 2002–2011 given by LAS Corresponding Member Jānis Kristapsons

14 February 2012: Senate Meeting dedicated to the 20<sup>th</sup> anniversary since the adoption of the LAS Charter

- Speech “The role and tasks of the Latvian Academy of Sciences in contemporary Latvia” given by the LAS President Juris Ekmanis
- Presentation “Transformation of the Latvian Academy of Sciences, adoption of the Charter, and establishment of traditions (1990–1994)” given by the Chair of the Senate Jānis Stradiņš
- Presentation “Transition period of the establishment of the Latvian Academy of Sciences and adoption of the Charter by the parliament (1997)” given by LAS Full Member Tālis Millers
- Presentation “Mutual cooperation between the Latvian Academy of Sciences and the Latvian Council of Science” given by the Chair of the Latvian Council of Science Andrejs Siliņš
- Adoption of the appeals by the LAS (on the Latvian language and on the demographic situation in the country)

20 March 2012: Senate Meeting

- Presentation “150 years of higher technical education” given by LAS Full Member Ivars Knēts
- Presentation “Growth over 150 years – from the Division of Agriculture of the Rīga Polytechnic School up to the Latvia University of Agriculture” given by *Dr.sc.ing.* Kaspars Vārtukapteinis

### **12 April 2012: Spring General Meeting**

- Opening speech given by the LAS President Juris Ekmanis
- Account of the LAS activities in 2011 given by the LAS Secretary General Valdis Kampars
- Election of the new LAS President was brought in the spotlight of the scientific community and general public of Latvia. For the first time over the period of 20 years, more than one candidate was nominated for the post – LAS Full Member Ojārs Spārtis by the Division of Humanities and Social Sciences and LAS Full Member Ivars Lācis by the Division of Physical and Technical Sciences. The General Meeting heard the programmatic statements made by both candidates. The new President was not elected at this General Meeting. (LAS Full Member Ojārs Spārtis was elected the LAS President at the Autumn General Meeting held on November 29 and took office as of 27 December).

24 April 2012: Senate Meeting

- Information on the implementation of the programme “National Identity” in 2012/2013 and on the organisation of the 5<sup>th</sup> Congress of Lettonics provided by LAS full members Jānis Stradiņš, Tālav Jundzis, and Ilga Jansone

15 May 2012: Senate Meeting

- Action strategy of the LAS Division of Humanities and Social Sciences

17 May 2012: Regular Meeting titled “Economic-financial situation in the EU: problems and solutions”

19 June 2012: Senate Meeting

- Results of the evaluation of study directions in Latvia presented by LAS Full Member Baiba Rivža

3 July 2012: Joint conference of the LAS and the Latvian Council of Science

- Assessment of the LCS activities over the whole period of its operation, including the first international evaluation of the Latvian science organised in 1992

11 September 2012: Senate Meeting

- Presentation “National Development Plan” given by LAS Corresponding Member Uldis Osis
- Scientific presentation “Smart nanostructured materials and phase transitions” given by LAS Corresponding Member Māris Knite

26 September 2012: Regular meeting “Homo sapiens: art – numbers – astronomy”

- Lecture delivered by winner of the LAS Grand Medal, LAS Full Member Kurts Švarcs

9 October 2012: Senate Meeting

- Scientific presentation “Biophotonic technologies and their development in Latvia” given by LAS Corresponding Member Jānis Spīgulis
- Scientific presentation “Research into the structure of functional materials through the use of X-ray absorption spectroscopy with synchrotron radiation” given by LAS Corresponding Member Aleksejs Kuzmins
- Scientific presentation “Persistent viral infections and their correlation with different clinical pathologies” given by LAS Corresponding Member Modra Murovska



13 November 2012: Senate Meeting

- Report “On the evaluation of higher education programmes commissioned by the Ministry of Education and Science” delivered by LAS Full Member Baiba Rivža

**29 November 2012: Autumn General Meeting**

- Opening speech given by the LAS President Juris Ekmanis
- Academic lecture “What actually is randomness?” delivered by LAS Full Member, winner of the award for the best scientific article at the Alan Turing centenary conference of computer science, Rūsiņš Mārtiņš Freivalds
- Election of the new LAS president, elections of new LAS members

11 December 2012: Senate Meeting

- Report “On progress in drafting the concept on higher education development” delivered by the Chair of the Council of Higher Education, *Dr.h.c.* Jānis Vētra

8 January 2013: Senate Meeting

- Inauguration of the new LAS President Professor Ojārs Spārītis, elected on 29 November 2012.
- Information on the achievements of the Latvian science in 2012 presented by LAS Corresponding Member Jānis Kristapsons

17 January 2013: Regular meeting titled “Achievements of the Latvian science in 2012”

- Brief presentations of the Top achievements’ authors and handing out of the LAS diplomas to the winners

12 February 2013: Senate Meeting

- Report “On the Baltic Conference on Intellectual Cooperation and situation at the Estonian Academy of Sciences” delivered by the LAS President Ojārs Spārītis
- Report “On the documentation of materials of the ‘Third Awakening’ and the project ‘Barikadopēdija’” delivered by journalist Andrejs Cīrulis, LAS Full Member Tālavš Jundzis, LAS Corresponding Member Guntis Zemītis
- The Senate arrived at a decision on science policy and funding in Latvia. It laid emphasis on the premise that only urgent and radical action on the part of the parliament and the Ministry of Education and Science can hold back the outflow of talented researchers, of the younger generation in particular, from Latvia and ensure

successful participation of Latvian scientists in the EU 7<sup>th</sup> Framework Programme and the new EU programme “Horizon 2020”.

12 March 2013: Senate Meeting

- Scientific presentation “Products of animal origin used by the population of Latvia and the quality thereof” given by LAS Full Member Aleksandrs Jemeljanovs
- Report “Situation of young scientists in the country and possibilities of their support” delivered by LAS Full Member Baiba Rivža and the Chair of the Association of Latvian Young Scientists Gatis Krūmiņš

20 March and 10 April 2013: meetings with ambassadors and attaches accredited to Latvia

- The ambassadors, accredited in Latvia, and employees of embassies, responsible for educational and scientific cooperation, of 25 countries were introduced with the activities carried out by the Academy divisions and the scientific research in Latvia.

#### **4 April 2013: Spring General Meeting**

- Opening speech given by the LAS President Ojārs Spārītis
- Account of the LAS activities in 2011 given by the LAS Secretary General Valdis Kampars
- Informative reports and debate on the national situation in the field of science and in the country

10 April 2013: Regular meeting titled “Higgs Boson discovered: physics of elementary particles at the crossroads”

- Report delivered by LAS Full Member Oļģerts Dumbrājs

16 April 2013: Senate Meeting

- Scientific presentation “Baltic literature of the 20<sup>th</sup> century: research and perspectives” given by LAS Full Member Benedikts Kalnačs
- Presentation “The latest research on the cultural history of Latgale” given by *Dr.philol.* Ilga Šuplinska, *Dr.philol.* Sanita Lazdiņa

21 May 2013: Senate Meeting

- Approval of the four-volume collection of academic articles *Latvieši un Latvija* [The Latvians and Latvia]. Report on the planned collection delivered by LAS full members Jānis Stradiņš, Tālav Jundzis, Ilga Jansone, Viktors Hausmanis

- Report “Commemoration events of Paul Walden organised in the framework of UNESCO celebrations and the tradition of the P. Walden symposium of organic chemistry in Latvia” delivered by LAS Corresponding Member Pēteris Trapencieris
- Presentation “A doctor for oneself. Cells as a remedy (cell therapy)” given by *Dr.biol.* Inese Čakstiņa

18 June 2013: Senate Meeting

- Presentation “Contribution made by the first President of the Latvian Academy of Sciences Pauls Lejiņš to science and to the establishment of the Academy of Sciences” given by the Chair of the Senate, LAS Full Member Jānis Stradiņš

17 September 2013: Senate Meeting

- Scientific presentation “Human genome research: from molecular mechanisms to personalised medicine” given by LAS Corresponding Member Jānis Kloviņš
- Presentation “InnovaBalt: Strengthening the research and innovative capacities of the Latvian Institute of Organic Synthesis, the leading Baltic regional centre for drug discovery” given by LAS Full Member Maija Dambrova
- Presentation “Development of the potential of infectious disease research at the Rīga Stradiņš University / BALTINFECT Nr. 316275” given by LAS Full Member Modra Murovska

25 September 2013: Regular Meeting titled “Brain and information”

- Lecture delivered by LAS Full Member Kurts Švarcs

8 October 2013: Senate Meeting

- Scientific presentation “Infant health in Latvia: scientific and organisational challenges” given by LAS Corresponding Member Dace Gardovska
- Scientific presentation “Experience in the EU research projects” given by LAS Corresponding Member Tālis Tisenkopfs
- Scientific presentation “Semantic changes and development of languages” given by LAS Corresponding Member Andrejs Veisbergs

21 October 2013: Regular Meeting

- Awarding of the LAS Grand Medal to LAS Foreign Member Alvis Brāzma
- The academic lecture “Biology and medicine as information sciences” delivered by the laureate
- Laudatio for A. Brāzma held by LAS Full Member Jānis Bārzdīņš

22 October 2013: Senate Meeting

- Scientific presentation “Current issues in soil science and agrochemistry in Latvia” given by LAS Corresponding Member Aldis Kārklīņš
- Scientific presentation “Methodology and practice of complex system modelling and simulation” given by LAS Corresponding Member Jurijs Merkurjevs
- Scientific presentation “Synchrotron radiation research in a nanometer scale and with femtometer precision” given by LAS Corresponding Member Juris Purāns

12 November 2013: Senate Meeting

- Information on the results of the 5<sup>th</sup> Congress of Lettonics and of the visiting meeting of the European Academy of Sciences and Arts
- Debates on the new candidates for LAS membership

### **28 November 2013: Autumn General Meeting**

- Awarding of the LAS Grand Medal to LAS Full Member Andris Ambainis
- The academic lecture “Quantum computing: between computer science, physics, and mathematics” delivered by the laureate
- Laudatio for A. Ambainis held by LAS Full Member Rūsiņš Mārtiņš Freivalds
- Elections of new LAS members

7 January 2014: Senate Meeting

- Scientific presentation “On the occupational prestige among high school students – a comparison of two cohorts” given by *Dr.sc.soc.* Ritma Rungule.

18 February 2014: Senate Meeting

- Debate on the evaluation of research institutes in Latvia carried out by the Technopolis Group and representation thereof in mass media (Andrejs Siliņš, Jānis Stradiņš, Ojārs Spārtis, Jānis Kristapsons, and others). See also the chapter “Overview of Research Strategy and Policy Issues” in this issue.
- Presentation of information on the collected articles *Latvieši un Latvija* [The Latvians and Latvia] (Jānis Stradiņš, Tālavš Jundzis)

# ACADEMY AWARDS AND OTHER AWARDS / HONOURS TO MEMBERS OF THE ACADEMY, 2011–2014

## GRAND MEDAL OF THE LATVIAN ACADEMY OF SCIENCES

The Grand Medal of the Latvian Academy of Sciences is the highest reward, which is awarded by the LAS to scientists of Latvia and of foreign countries for their outstanding creative contribution.

### Winners of the Grand Medal in 2012

**Pauls Pumpēns** – LAS Full Member – for significant contribution to the field of molecular virology and upbringing of a new generation of researchers

**Andrievs Ezergailis** – LAS Foreign Member – for substantial contribution to studies of the 20<sup>th</sup> century history of Latvia

### Winners of the Grand Medal in 2013

**Andris Ambainis** – LAS Full Member – for outstanding results in the field of quantum computing theory

**Alvis Brāzma** – LAS Foreign Member – for outstanding results in the field of bioinformatics

### Winners of the Grand Medal in 2014

**Viktors Ivbulis** – LAS Full Member – for outstanding contribution to Indological Studies

**Regīna Žuka** – LAS Foreign Member – for essential contribution to design and development of anticancer drug Ftorafur

## DISTINCTIONS BY THE CABINET OF MINISTERS

Significant work or merits in the development of a democratic and judicial state of Latvia, economic or social activity, or other fields of national importance are rewarded with the award of the Cabinet of Ministers. For the purpose of showing recognition by the government, the Honorary Diploma of the Cabinet of Ministers has been established by the Cabinet of Ministers of the Republic of Latvia.

## AWARDS OF THE CABINET OF MINISTERS

Awards of the Cabinet of Ministers in 2011–2013 have been received by: LAS Full Member **Eduards Liepiņš**, LAS Honorary Member **Imants Lancmanis**, LAS Foreign Member **Valters Nollendorfs**, LAS Honorary Member **Jānis Streičs**, *Dr.h.c.* **Jānis Rukšāns**, LAS Full Member **Linards Skuja**, LAS Honorary Member **Knuts Skujenieks**, LAS Full Member **Jekaterina Erenpreisa**, LAS Honorary Member **Indulis Ojārs Ranka**, LAS Honorary Member **Dainis Ivāns**.

## HONORARY DIPLOMAS OF THE CABINET OF MINISTERS

Honorary diplomas of the Cabinet of Ministers in 2011–2013 have been received by: LAS Honorary Member **Uldis Bērziņš**, LAS Full Member **Jānis Krastiņš**, LAS Corresponding Member **Jānis Kristapsons**, LAS Full Member **Juris Ekmanis**, LAS Honorary Member **Anna Jurkāne**, LAS Corresponding Member **Edīte Birģele**, LAS Corresponding Member **Pēteris Zālītis**, **Publishing House “Zinātne”**, LAS Full Member **Oļģerts Krastiņš**, PhD **Vjačeslavs Kaščejevs**, LAS Full Member **Ivars Lācis**.

## PRIZES BY THE LATVIAN ACADEMY OF SCIENCES

*The Rainis Prize for outstanding contribution in science or culture* – **Viktors Hausmanis** (2012); **Jānis Strupulis** (2013)

*The Arturs Balklavs Prize for outstanding achievements in the popularisation of science* – **Oskars Gerts** (2012); **Voldemārs Hermanis** (2013)

*The Kārlis Mūlenbahs Prize in applied Latvian linguistics (jointly with the Riga Latvian Society)* – **Rasma Grīle** (2012)

*The Gustavs Vanags Prize in chemistry* – **Valerjans Kauss** (2013); **Edgars Sūna** (2014)

*The Arvids Kalniņš Prize in forestry, wood research and technology (jointly with the Latvian Academy of Agriculture and Forestry) – Leonards Līpiņš (2012)*

*The Pauls Stradiņš Prize in medical science (jointly with the Pauls Stradiņš Museum of the History of Medicine) – Valdis Pīrāgs (2011); Romans Lācis (2014)*

*The Edgars Siliņš Prize in physics – Juris Žukovskis (2012); Vladimirs Kuzovkovs (2014)*

*The Kārlis Ulmanis Prize established by Jānis Labsvīrs for research and study of the problems of the history of Latvia – Daina Bleiere (2013)*

*The Dītrihs Andrejs Lēbers Prize in law – Egils Levits (2013)*

*The Vilis Plūdonis Prize in literary criticism – Vera Vāvere (2014)*

*The Marģers Skujenieks Prize in statistics – Juris Krūmiņš (2014)*

## WINNERS OF THE LAS AWARDS FOR YOUNG SCIENTISTS

*The Ludvigs and Māris Jansons Prize in physics – Linards Kalvāns (2012); Aleksandrs Kaļiņko, Juris Zavickis (2013); Andris Šutka, Dmitrijs Zablockis (2014)*

*The Mārtiņš Straumanis–Alfrēds Ieviņš Prize in chemistry – Dace Rasiņa (2012); Elna Priede (2013); Olga Stepanova (2014)*

*The Emīlija Gudriniece Prize in chemistry – Irina Novosjolova (2012); Jevgeņija Mackeviča (2013); Jevgeņija Lugiņina (2014)*

*The Zenta Mauriņa Prize in humanities – Andris Hiršs (2012); Helena Akatova (2014)*

## WINNERS OF THE LAS PRIZES AWARDED IN SPONSORSHIP

*The Award of the European Academy of Sciences and Arts (The Felix Award) – Ilmārs Blumbergs (2011); Anna Jurkāne (2013)*

*The Incentive prize of the European Academy of Sciences and Arts – Kristiāna Ābele, Roberts Spīrģis (2011); Pauls Daija, Sandis Laime (2013)*

*Jointly with the Joint-Stock Company “Latvenergo”:*

*The Alfrēds Vītols Prize – Vladislavs Pugačevs (2012); Antans Sauļus Sauhats (2013); Vilnis Krēsliņš (2013)*

*The Annual Award – Leonards Latkovskis (2012); Ivars Raņķis (2013)*

*Jointly with the Joint-Stock Company "ITERA LATVIJA" and the Rīga Technical University:*

**Uldis Sedmalis, Daiga Zigmunde** (2011); **Pēteris Šipkovs, Sarmīte Strautiņa** (2012); **Linda Legzdiņa, Gundega Lināre** (2013)

*Jointly with the Joint-Stock Company "LATVIJAS GĀZE" and the Rīga Technical University Development Fund:*

**Jānis Gardovskis, Andrejs Kokins, Andra Ješinska, Jānis Raibarts** (2012); **Oskars Kalējs, Ralfs Kolītis, Jānis Volkolākovs, junior** (2013)

*Jointly with the Joint-Stock Company "GRINDEKS":*

**Raimonds Valters, Jānis Krastiņš, Guntis Bārzdīņš** (2012)

*Jointly with the Patent Office of the Republic of Latvia:*

*The Walter Zapp Prize for outstanding inventor –* **Māris Ābele, Kazimirs Lapuška** (2011); **Jānis Spīgulis** (2013)

*The Rīga Prize jointly with the Rīga City Council:*

**Andris Šternbergs** (2011); **Tālavš Jundzis** (2012); **Andris Caune** (2013)

*The Rīga Prize jointly with the "Rīga Prize" Society and the Joint-Stock Company "ITERA LATVIJA":*

**Margarita Barzdeviča, Iļja Gerčikovs, Jānis Erenštreits, Laimonis Šēnbergs** (2011); **Leonīds Ribickis, Raimonds Pauls, Aija Taimiņa, Rīga Zoological Garden** (2012)

*The Rīga Prize Honorary Diploma –* **Dainis Īvāns, Daiga Leimane, Elvira Hrščenoviča** (2012)

*Jointly with the Limited Liability Company "L'ORÉAL BALTIC" and the UNESCO Latvian National Commission:*

**Liene Ņikitina–Zaķe, Marija Duncē, Baiba Švalbe** (2011); **Dagnija Loča, Ilze Smeltere, Elīna Škapare** (2012); **Zane Kalniņa, Jeļizaveta Sokolovska, Liāna Širmane** (2013)

*Jointly with the Joint-Stock Company "Exigen Services Latvia" and the Rīga Technical University Development Fund:*

*The Eižens Āriņš Prize –* **Andris Ambainis, Jānis Grundspenķis** (2012); **Aldis Baums, Jānis Ertis** (2013)



*Jointly with the Joint-Stock Company “Latvijas Dzelzceļš” and the Rīga Technical University Development Fund:*

**Aija Poča, Arturs Plešaunieks** (2012), **Kazimirs Voroņeckis, Pāvels Četirboks** (2013)

## OTHER SIGNIFICANT PRIZES IN SCIENCE AND HONOURS AWARDED TO THE LAS MEMBERS

*The Great Award for Cultural Heritage – Imants Lancmanis* (2011)

*The French Order of Arts and Letters – Imants Lancmanis* (2013)

*The Latvian Annual Literature Award – Alberts Bels* (2013)

*The Cicero Prize – Tālav Jundzis, Juris Rubenis, Egils Levits* (2011), **Ivars Knēts** (2012)

*The Medal of the Baltic Academies of Sciences – Andris Šternbergs* (2013)

*The Honorary Diploma of the Ministry of Agriculture of the Republic of Latvia – Aleksandrs Jemeļjanovs, Juris Skujāns* (2012)

*The Annual Award in Forestry “Zelta čiekurs” (Golden Cone) – Pēteris Zālītis* (2012)

*The Solomons Hillers Medal – Edgars Ābele* (2012)

*The World Economic Forum Award “Young Scientists 2013” – Vjačeslavs Kaščejevs* (2013)

*The Baltic Assembly Prize for Science – Renāte Blumberga* (2013)

*The Medal of the Baltic Assembly – Marco Kirm* (2013)

*The Jānis Lielmanis Prize – Īzaks Rašals* (2013)

*The Annual Award in Medicine – Georgs Andrejevs* (2013)

*The Norman Hackerman Award – Olafs Daugulis* (2013)

*The Paul Walden Medal – Edgars Sūna* (2013)

On 9 December 2013, LAS Full Member **Vaira Viķe-Freiberga**, the former President of Latvia (1999–2007), was elected the President of the World Leadership Alliance “The Club de Madrid”.

WINNERS OF THE LAS PRIZES FOR YOUNG SCIENTISTS  
AWARDED IN SPONSORSHIP

*Jointly with the Joint-Stock Company “Latvenergo”:*

**Lauris Bisenieks, Jeļena Daškova-Golovkina, Dzintars Jaunzems, Agris Kamenders, Marina Koņuhova, Svetlana Orlova, Andrejs Stepanovs** (2011); **Gerards Gavrilovs, Aleksandrs Mesņajevs, Guntars Vempers, Aivars Žandeckis** (2012); **Oļegs Borščevskis, Linards Grigāns, Jevgeņijs Kucajevs, Lana Migla, Mārtiņš Silarājs** (2013); *Special Prize – Nataļja Skobeļeva* (2012)

*Jointly with the Joint-Stock Company “LATVIJAS GĀZE” and the Rīga Technical University Development Fund:*

**Gints Jaudzems, Jānis Vilmanis** (2011); **Aleksejs Batrakovs, Mārtiņš Kalējs** (2012)

*Jointly with the Joint-Stock Company “GRINDEKS”:*

**Ize Adlere, Oļga Bobiļeva, Aiga Grandāne, Līga Žūka** (2012)

HOLDERS OF THE GRANTS AWARDED  
BY THE LATVIAN ACADEMY OF SCIENCES

*The Emīlija Gudriniece–Alfrēds Ieviņš Grant in Chemistry – Jevgeņija Mackeviča* (2011/2012); *Jevgeņija Lugiņina* (2012/2013); *Evija Rolava* (2013/2014); *Agnese Stikute* (2013/2014)

# INTERNATIONAL SCIENTIFIC RELATIONS

International activities of the Latvian Academy of Sciences include representation of Latvia in international scientific organizations that contribute to the development of scientific research and scientific progress, and bilateral actions with its various partners, most of them being academies of sciences.

An agreement with the Ministry of Education and Science of Latvia, signed in 2008, delegates to the Academy the duties of coordination and implementation of European science programmes and projects: COST, EUREKA, EUROSTARS, the joint Baltic Sea regional research programme BONUS, the EU Joint Technology initiatives and the functions of national funding agency for ERA-NET projects, and popularization of science.

## Memberships in international organizations and networks

The Latvian Academy of Sciences (LAS) is a member of the main European and global networks of academies of sciences: **ALLEA**, **EASAC**, **ICSU**, **UAI** and networks: **IAP**, **IAMP**. The LAS holds a status of observer at the Federation of the European Academies of Medicine, FEAM, since 2006, and the affiliated organization of International Foundation for Science, IFS. The LAS has an agreement on scientific cooperation with **UNESCO** and on the national level the Academy has a representative at the Assembly of the Latvian National Commission (LNC) for UNESCO (A. Siliņš). The LAS, the UNESCO LNC and L'Oreal Baltic jointly grant annual fellowships "For Women in Science".

**ALLEA** (<http://www.allea.org>), the European Federation of National Academies of Sciences and Humanities, plays the key stakeholder role in European science policy, and it is engaged in the future process of establishing the European Research Area. In 2012–2013, ALLEA has been actively engaged in the formulation of recommendations and advice from the beginning of the deliberations on the new EU framework programme for Research and Innovation, *Horizon 2020* and particularly on the role of social sciences and humanities (SSH) therein, as well as the Digital Agenda for Europe. In November 2012, upon the initiative of ALLEA, EASAC and *Academia Europaea*, all academies addressed their national governments and the LAS appealed to the Prime Minister V. Dombrovskis urging to support *Horizon 2020* at the November Summit on the EU budget for 2014–2020.

As part of ALLEA, the LAS was present at the General Assembly (GA) in Rome (April 2012) and the GA in Berlin (29–30 April 2013). Based on earlier consultations

with member academies, including LAS, the GA 2012 issued joint Declaration “Open Science for the 21<sup>st</sup> Century” together with the Vice-president of the European Commission, Mme Nellie Kroes with a call to scientific communities and their institutions to make decisive steps towards open science.

ALLEA established, in mid-2012, two new Task forces E-Humanities and Social Sciences and Humanities. ALLEA and the Union of the German Academies of Sciences plan to initiate a European research programme comprising long-term humanities and social science research. In this respect, analysis of Basic Research in social sciences and the humanities (SSH) was started in December 2013 by ALLEA and the Union of the German Academies and this intends to map the numerous ongoing SSH research projects and activities of the European academies, with the long-term objective to harmonise existing standards, tools and instruments applied in those undertakings.

In October 2013, the ALLEA released a statement “Ethics Education in Science” prepared by the ALLEA permanent working group (WG) on Science & Ethics. In response to the initiative of ethics WG to develop a platform of information and exchange on “Ethics Education in Science” the LAS expressed its support and nominated a Latvian coordinator for this activity.

**EASAC** (<http://www.easac.org>), the European Academies’ Scientific Advisory Council, draws up scientific advice to consult the European Parliament. So it mainly produces authoritative reports and assessments on scientific topics relevant to European policy needs. As part of this framework, the LAS has been present at the EASAC Spring meetings in Dublin (May 2012) and Halle (6–7 June 2013) and Autumn meeting in Rome (5–6 December 2013), and at the “High-Level Meeting” in Brussels (16 October 2012), when EASAC was invited for a meeting by the DG Research. As an outcome of this meeting, it was decided that the flow of information between the EU Commission and EASAC academies should be improved. A better exchange of information also forms part of the two-year collaboration between EASAC and the Chief Scientific Advisor to Commission President Barroso, Prof. Anne Glover, which Council had approved. The LAS was present at the workshop „Strengthening the Dialogue between Science and Policy” in Halle (18–19 September 2012), which was a joint one of EASAC and NASAC. As the IAP regional network for Europe, EASAC is developing a closer relationship with the IAP regional network for Africa, NASAC. The workshop was dedicated to the improvement of the processes by which national academies of science deliver science-based advice to policy-makers, both on a national and on a regional (EU or African) level.

Since joining the EASAC, in 2004, the Academy has not been represented on either of the three EASAC’s Programme Steering Panels and has only once nominated a Latvian scientist-expert to the EASAC working group (Sustainable Biofuels), primar-

ily due to the shortage of funding for such activities. In 2012–2013, the Academy disseminated across Latvia the EASAC reports: “Plant genetic resources for food and agriculture”, “EASAC statement on sustainable biofuels in Europe: the current status of biofuels in the European Union, their environmental impacts and future prospects”, “Direct-to-consumer genetic testing for health-related purposes in the European Union”, “The current status of biofuels in the European Union, their environmental impacts and future prospects”, “Carbon Capture and Storage in Europe”, “Planting the Future: opportunities and challenges for using crop genetic improvement technologies for sustainable agriculture”. The LAS informed the Latvian MEPs about the Report launch events, that are usually held in Brussels.

**ICSU** (<http://www.icsu.org>). The International Council for Science is a nongovernmental organisation uniting both national scientific bodies, however, mainly academies of sciences (120 members, representing 140 countries) and International Scientific Unions (31 members). The Academy is Latvia's national representative to ICSU. In view of the smallness of Latvia and its research community, as well as the financial constraints, the LAS maintained contacts with ICSU through correspondence.

European members of ICSU hold annual meetings and, since 2011, have a Secretariat hosted by the Council of Finnish Academies. As part of this framework, the LAS has been present at ICSU–Europe annual meetings in Helsinki (3 October 2012) and Prague (1 October 2013). Overall, ICSU–Europe work plan was built around four themes: (1) data and information issues; (2) Future Earth; (3) national committees; (4) development goals.

The website for the Group of European members of ICSU was published in October 2012. To optimize the website as a tool for sharing European contacts and best practices, in the last quarter of 2013, the LAS reviewed and updated the overview table of the national committees, scientific societies or other organizations in Latvia. The overview of the national committees across Europe was initially created by the European Group of ICSU Secretariat.

**UAI** (<http://www.uai-iaa.org>). The International Union of Academies of Humanities and Social Sciences encourages international cooperation in those branches of learning, in the fields of the humanities and social sciences promoted by the Academies and institutions represented. The UAI is at present involved in approx. 80 projects worldwide, which fall under six different headings: European Language and Literature, Greco-Roman World, Oriental Studies, History of Civilizations, History of Thought, and History of Art. Over the last few years, the LAS has not been involved in any of the UAI research projects. In 2013, the LAS was present at the UAI GA in Mainz (May 2013) when the new president of UAI was elected. In his introductory message to member academies, on 7 November 2013, the newly elected President ac-

knowledge two major challenges ahead, namely, to get more new member academies involved in projects and to get more projects in social science.

**IAP** (<http://www.interacademies.net>) is a global network gathering 106 academies of sciences and **IAMP**, the InterAcademy Medical Panel (<http://www.iamp-online.org>) is a global network of the world's medical academies and medical sections of academies of science (73 members). Both networks are committed to help member academies work together to advise citizens and public officials on the scientific aspects of critical global issues. In 2012–2013, IAP issued a number of statements signed by the majority of its members, the LAS included, on issues of global concern:

- Statement on Population and Consumption (14 June 2012),
- Letter from Rio-2013 on the “Role of Science Academies in Grand Challenges and Integrated Innovations for Sustainable Development and Poverty Eradication” (February 2013),
- Response to the Report of the High Level Panel of Eminent Persons on the post-2015 development agenda “A New Global Partnership” (September 2013),
- IAP/IAMP Joint Statement “Antimicrobial Resistance – A Call for Action” (November 2013).

The LAS was present at the IAP Regional Workshop “Science Academies in Central and Eastern Europe (CEE) and their Role in Knowledge-based Society” in Minsk (11–12 June 2012) that was hosted by the National Academy of Sciences of Belarus. This event was the first attempt to integrate the academies of sciences of CEE into the IAP collaboration framework, and played a coordinating role in expanding links between the academies of the region and launching various projects on science communication.

IAP collaborates with the World Economic Forum in seeking the potential candidates for the Forum’s New Champions 2013 competition. Each year (since 2008) the World Economic Forum selects up to 40 extraordinary leaders in science under the age of 40. Nominees have to be pioneers with a proven track record of advancing the frontiers of science, engineering or technology. The LAS nominee V. Kaščejevs, LAS corr. member, associate professor of the University of Latvia, was among 40 young scientists who were honoured at World Economic Forum’s Annual Meeting of the New Champions 2013, also known as “Summer Davos” in Dalian, People’s Republic of China (11–13 September, 2013). V. Kaščejevs received the prestigious award out of the hands of Mr. Klaus Schwab, the Founder and Executive Chairman of the World Economic Forum.

### **Bilateral cooperation**

The Latvian Academy of Sciences is signatory to 28 agreements and memoranda of understanding (01.03.2014) with partner academies and institutions providing for reciprocal visits of Latvian and foreign scientists, including a trilateral agreement among the Baltic academies of sciences (see Appendix at the end of this chapter). In the reporting period, the Academy signed a collaboration agreement with the Georgian National Academy of Sciences, renewed protocol to the agreement with the Bulgarian Academy of Sciences and signed the Memorandum on developing bilateral relations between the LAS and National Academy of Sciences of Azerbaijan in the field of science and innovation.

The major part of Academy's agreements (19) provides support to short-term scientific visits, irrespective of the scientific discipline. In recent years the approach has shifted its focus away from individual scientific visits to give greater weight to bi-national research projects and workshops. Thereby, in the frames of scientific exchange programmes with the Polish Academy of Sciences (PAS), the Bulgarian Academy of Sciences (BAS) and the Hungarian Academy of Sciences (HAS), reciprocal visits of researchers collaborating within joint research projects are encouraged as a priority.

The average number of Latvian and foreign scientists who use the opportunities offered by the scientific exchange scheme normally comprises 55–60 persons from each side. The LAS and its partner academies support also the visits of young scientists, including doctoral students.

Apart from supporting and financing international mobility of researchers within the Baltic, the Latvian, Estonian, and Lithuanian academies of sciences, as well as Finnish colleagues, meet regularly at the Baltic Conferences on Intellectual Cooperation (BCIC) and rotate the location of these meetings. On 28–29 January 2013, the 13th conference in the series of the Baltic Conferences on Intellectual Cooperation "European Research Area and Small Countries" was organized by the Estonian Academy of Sciences. The delegates of the three Baltic academies of sciences, the Academy of Finland, the Norwegian, and the World Academy of Art and Science (WAAS) met in Tallinn. The presentations of the LAS delegates deliberated upon the following topics: The impact of global processes on science in small countries (A. Siliņš), The role of their *diaspora* in the smaller EU member states meeting the challenge of science research (E. B. Deksnis), Cooperation among the scientists of the Baltic States in the priority scientific areas (A. Šternbergs). The Conference included the customary awarding of the Medals of the Baltic Academies of Sciences. The 2013 Medals were presented to T. Sommere (Estonia), A. Šternbergs (Latvia) and E. Butkus (Lithuania). The wording on each Medal diploma is different, yet one feature they all have in common is the great contribution to fostering cooperation among the scientists in the Bal-

tic region and to carrying out joint research. The Estonian Academy of Sciences passed the baton over to the LAS as the organizer of the next BCIC conference in Riga in 2015.

### Chronicle

In the reporting period a number of international events / festive meetings were organized by the LAS and the LAS partner-academies, as well as by international organizations. Prominent among these were:

- **The European Academy of Sciences and Arts** held a solemn ceremony in which Jānis Stradiņš, the Chairman of the LAS Senate, was inaugurated as a Honorary Senator of the European Academy of Sciences and Arts (3 March 2012).

- The Latvian Academy of Sciences hosted and organized in collaboration with the **Taiwan Foundation for Democracy** an international conference “Democracy and Development – Taiwan and the Baltic Countries in comparative perspective” (27–28 April 2012).

- **The National Academy of Sciences of Belarus** organized, in partnership with **InterAcademy Panel**, an international conference “Science Academies in Central and Eastern Europe and Their Role in Knowledge-based Society”. The LAS delegate, LAS Full Member Baiba Rivža took part in the event with a presentation (11–12 June 2012).

- The Latvian Academy of Sciences received professor Øivind Andersen, Secretary-General of the **Norwegian Academy of Sciences**, to become acquainted with the LAS activities and to discuss the possibilities of signing a new cooperation agreement (18–19 October 2012).

- The Ninth Annual Meeting of the Science and Technology in Society (STS) forum in Kyoto was attended by LAS Vice president Tālavš Jundzis. The 2012 STS forum also included the Academy Presidents’ meeting at the invitation of president of the **Science Council of Japan** Prof. Takashi Onishi (7–9 October 2012).

- The Latvian Academy of Sciences organised two meetings with **ambassadors and attaches** accredited to Latvia, responsible for educational and scientific cooperation, and economic affairs, with an aim to inform them about the activities carried out by the Academy’s divisions and to demonstrate the potential of Latvian science, to create new international joint projects and expand the existing projects (20 March and 10 April 2013).

- **The Federation of All European Academies (ALLEA)** held its 14<sup>th</sup> General Assembly in Berlin Brandenburg Academy of Sciences and Humanities, Germany. The LAS was represented by president Ojārs Spārītis (29–30 April 2013).



• **The Union Academique Internationale (UAI)** held its 87th General Assembly in Mainz (Germany). The LAS was represented by LAS Full Member Benedikts Kalnačs (12–17 May 2013).

• **The European Academies Science Advisory Council (EASAC)** held its annual Spring meeting in Halle, Germany. The meeting was hosted by the German National Academy of Sciences *Leopoldina*. The LAS was represented the Academy President Ojārs Spāritis (6–7 July 2013).

• The Latvian Academy of Sciences received President of **the Georgian National Academy of Sciences (GNAS)** professor Giorgi Kvesitadze. The Academy presidents signed an Agreement on scientific co-operation between the LAS and GNAS (18 July 2013).

• The Latvian Academy of Sciences received Mr. Friedrich Oehlschläger, who represented the German company Minox GmbH at **the Walter Zapp Prize ceremony** (3–4 September 2013). The prize is awarded to the winner jointly by Minox GmbH, the Patent Office of Latvia and the Latvian Academy of Sciences every second year at the beginning of September.

• The Tenth Annual Meeting of the **Science and Technology in Society (STS)** forum in Kyoto was attended by LAS president Ojārs Spāritis. The 2012 STS forum also included the Academy Presidents' meeting at the invitation of president of the **Science Council of Japan** Prof. Takashi Onishi (6–8 October 2013).

• **The Armenian National Academy of Sciences (ANAS)** celebrated its 70th anniversary. The LAS President Ojārs Spāritis attended the Solemn and Anniversary Session upon the invitation of the ANAS President Radik Martirosyan (15–16 October 2013).

• The Latvian Academy of Sciences received President of **the European Academy of Sciences and Arts** professor Felix Unger whose visit was related to the 5th Congress of Letonists. After having addressed the Opening session of the Congress, Prof. Unger inaugurated President of Latvia Andris Bērziņš as a Protector of the European Academy of Sciences and Arts (EASA). The same day the LAS and the EASA held a joint visiting session in Turaída Museum Reserve. During this event, the Felix Prize awarding ceremony took place. The European (Felix) Prize was presented to Anna Jurkāne, LAS honorary member, for founding the Turaída Museum Reserve and developing it into a unique cultural monument of European relevance and a major tourist destination. The two supporting prizes went to *Dr.philol.* Sandis Laime and *Dr.philol.* Pauls Daija (30 October 2013).

• International Association of Academies of Sciences celebrated its foundation 20th anniversary. Rīga Technical University Professor Artūrs Medvids represented the Latvian Academy of Sciences in the celebrations (3–4 December 2013).

- **The European Academies Science Advisory Council (EASAC)** held its annual Autumn meeting in Rome, Italy. The meeting was hosted by the *Accademia Nazionale dei Lincei*. The LAS was represented by president Ojārs Spārītis (5–6 December 2013).

- **The National Academy of Sciences of Belarus** commemorated its 85th anniversary and organized an international Conference dedicated to the Day of Belarusian Science (celebrated on the last Sunday of January). The chairperson of the LAS Division of Agriculture and Forestry Sciences, Baiba Rivža, took part in these events with a presentation (23–24 January 2014).

- The LAS president Ojārs Spārītis visited **the Azerbaijan National Academy of Sciences** and was received by the Academy President Akif Agamekhti oglu Alizadeh. During their meeting the Academy Presidents signed the Memorandum on developing bilateral relations between the LAS and National Academy of Sciences of Azerbaijan in the field of science and innovation (15–16 January 2014).

#### **Foreign Academy memberships / honours**

**Academia Europaea.** LAS full members E. Grēns, V. Tamužs, A. Cēbers, M. Auziņš, M. Freivalds-Rūsiņš and LAS Corr. Member A. Linē are full members of *Academia Europaea*.

**Academia Scientiarum et Artium Europaea.** LAS full members M. Auziņš, E. Blūms, A. Caune, J. Ekmanis, I. Kalviņš, V. Kluša, I. Knēts, R. Kondratovičs, M. Kūle, T. Millers, O. Spārītis, J. Stradiņš, J. Volkolākovs, P. Zvidriņš, T. Jundzis, *Doctors honoris causa* J. Vētra and R. Lācis, honorary members I. Lancmanis, Z. Stankēvičs and S. Naumovs are active members of the European Academy of Sciences and Arts.

**European Academy of Sciences in Support of Excellence in Science and Technology.** LAS full members V. Tamužs, A. Krūmiņš and LAS Corr. Member A. Šostaks are members of the European Academy of Sciences in Support of Excellence in Science and Technology.

**Estonian Academy of Sciences.** LAS Full Member J. Stradiņš is a foreign member of the Estonian Academy of Sciences.

**Georgian National Academy of Sciences.** LAS Full Member J. Stradiņš is a foreign member of the Georgian National Academy of Sciences.

**German National Academy of Sciences *Leopoldina*.** LAS Full Member J. Stradiņš is a member of *Leopoldina*.

**Lithuanian Academy of Sciences.** LAS full members J. Stradiņš, J. Ekmanis, B. Rivža and *Dr.h.c.* Voldemārs Striķis are foreign members of the Lithuanian Academy of Sciences.

**Russian Academy of Sciences.** LAS Full Member E. Grēns is a corresponding member of the Russian Academy of Sciences.

**Russian Academy of Agricultural Sciences.** LAS Full Member B. Rivža is a corresponding member of the Russian Academy of Agricultural Sciences.

**Royal Swedish Academy of Agriculture and Forestry.** LAS Full Member B. Rivža, LAS Corr. Member A. Kārklīņš, and *Dr.h.c.* P. Rivža are foreign members of the Royal Swedish Academy of Agriculture and Forestry.

**Royal Swedish Academy of Engineering Sciences.** LAS Full Member A. Treimanis is a foreign member of the Royal Swedish Academy of Engineering Sciences.

**Saxonian Academy of Sciences in Leipzig.** LAS Full Member J. Stradiņš is a corresponding member of the Saxonian Academy of Sciences.

Appendix

## COOPERATION AGREEMENTS / MEMORANDA OF UNDERSTANDING OF THE LATVIAN ACADEMY OF SCIENCES WITH PARTNER ORGANISATIONS

(with the date of signing the currently valid agreement in brackets)

- |   |              |
|---|--------------|
| 1. <b>Austrian</b> Academy of Sciences  | (31.12.2002) |
| 2. <i>Academia Scientiarum et Artium Europaea</i> , Salsburg, <b>Austria</b>      | (27.06.1991) |
| 3. <b>Azerbaijan</b> National Academy of Sciences                                 | (16.01.2014) |
| 4. National Academy of Science of <b>Belarus</b>                                  | (16.05.2002) |
| 5. <b>Berlin-Brandenburg</b> Academy of Sciences and Humanities                   | (01.11.2002) |
| 6. <b>British</b> Academy   | (22.11.1991) |
| 7. <b>Bulgarian</b> Academy of Sciences   | (29.03.1996) |
| 8. Royal Society of <b>Canada</b>   | (26.07.1996) |
| 9. Academy of Sciences of the <b>Czech</b> Republic                               | (01.10.1997) |
| 10. <b>Estonian</b> Academy of Sciences and <b>Lithuanian</b> Academy of Sciences | (12.11.1991) |

11. **Finnish** Academy of Science and Letters (11.10.1999)
12. **French** Academy of Sciences (22.03.1994)
13. **Georgian** National Academy of Sciences (18.07.2013)
14. **Hungarian** Academy of Sciences (29.06.1994)
15. **Israel** Academy of Sciences and Humanities (05.07.1999)
16. **Italian** National Academy of Sciences (*Accademia Nazionale dei Lincei*) (05.09.2000)
17. Royal Society of **London** (30.10.1991)
18. **Montenegrin** Academy of Sciences and Arts (11.11.2005)
19. **Norwegian** Academy of Science and Letters (01.05.1991)
20. **Polish** Academy of Sciences (19.06.1996)
21. **Russian** Academy of Sciences (04.06.2008)
22. **Saxon** Academy of Sciences (29.09.2004)
23. **Slovak** Academy of Sciences (31.03.2000)
24. **Slovenian** Academy of Sciences and Arts (07.12.1993)
25. Royal **Swedish** Academy of Letters, History and Antiquities (11.04.1996)
26. **Swiss** Academy of Sciences (20.11.2001)
27. National Science Council, Republic of China (**Taiwan**) (21.03.1997)
28. National Academy of Sciences of **Ukraine** (26.11.1997)

# MEMBERS OF ACADEMY

## FULL MEMBERS

**Andris AMBAINIS** (Computer Science), b. 18.01.1975, elected 22.11.2007. Grand Medal of the LAS (2013). DPTS<sup>1</sup>. *University of Latvia*. Tel.: (371) 67034479. E-mail: ambainis@lanet.lv; andris.ambainis@lu.lv <http://www.lza.lv/scientists/ambainisa.htm>

**Bruno ANDERSONS** (Material Science), b. 22.07.1951, elected 25.11.2004. DCBMS; DAFS. *Latvian State Institute of Wood Chemistry*. Tel.: (371) 67552554. E-mail: bruno.andersons@edi.lv <http://www.lza.lv/scientists/AndersonsB.HTM>

**Georgs ANDREJEVS** (Medicine), b. 30.10.1932, elected 10.11.1995. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67220725, (371) 26402512. E-mail: georgsandrejevs@gmail.com

**Mārcis AUZIŅŠ** (Physics), b. 11.01.1956, elected 27.11.1998. Grand Medal of the LAS (2010). DPTS. *University of Latvia*. Tel.: (371) 67034301. E-mail: marcis.auzins@lu.lv; rektors@lu.lv <http://www.lza.lv/scientists/auzinsm.htm>

**Arvids BARŠEVSKIS** (Biology), b. 20.09.1965, elected 24.11.2011. DCBMS. *Daugavpils University, Latvia*. Tel.: (371) 65422180. E-mail: arvids.barsevskis@du.lv [http://du.lv/lv/par\\_mums/vadiba/rektors](http://du.lv/lv/par_mums/vadiba/rektors); <http://lapas.dau.lv/ab/cv.html>

**Jānis BĀRZDIŅŠ** (Computer Science), b. 23.01.1937, elected 09.04.1992. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 67224363. E-mail: janis.barzdins@lumii.lv [http://www.lumii.lv/Pages/MII\\_staff/jbarzdin.html](http://www.lumii.lv/Pages/MII_staff/jbarzdin.html)

**Mārtiņš BEKERS** (Biotechnology), b. 31.08.1928, elected 16.03.1978. Grand Medal of the LAS (2000). DCBMS; DAFS. *Latvian Academy of Sciences*. Tel.: (371) 67340282, (371) 67220725. E-mail: chem@lza.lv <http://www.lza.lv/scientists/bekersm.htm>

**Jānis BĒRZIŅŠ** (History), b. 29.04.1941, elected 23.11.2000. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 28754810. E-mail: j.beerzins@gmail.com <http://www.lza.lv/scientists/berzinsj.htm>

**Jānis Guntis BĒRZIŅŠ** (Physics), b. 19.01.1936, elected 25.11.2004. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67261304. E-mail: jberzins@latnet.lv <http://www.lza.lv/scientists/berzinsja.htm>

**Valdis BĒRZIŅŠ** (History), b. 18.06.1935, elected 27.11.1998. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 67034507. E-mail: valdis-b@latnet.lv <http://www.lza.lv/scientists/berzinsv.htm>

**Ivars BIĻINSKIS** (Computer Science), b. 23.10.1934, elected 06.12.1990. DPTS. *Institute of Electronics and Computer Science*. Tel.: (371) 67558190. E-mail: bilinskis@edi.lv <http://www.lza.lv/scientists/bilinski.htm>

<sup>1</sup> DPTS – Division of Physical and Technical Sciences; DCBMS – Division of Chemical, Biological, and Medical Sciences; DHSS – Division of Humanities and Social Sciences; DAFS – Division of Agriculture and Forest Sciences.

- Aina BLINKENA** (Linguistics), b. 05.09.1929, elected 09.01.1992. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 67574288, (371) 29572160. E-mail: blinkena@gmail.com  
<http://www.lza.lv/scientists/blinkena.htm>
- Elmārs BLŪMS** (Physics), b. 05.02.1936, elected 09.01.1992. Grand Medal of the LAS (2005). DPTS. *Institute of Physics, University of Latvia*. Tel.: (371) 67944664. E-mail: eblums@sal.lv; eblums@latnet.lv <http://www.lza.lv/scientists/blumse.htm>
- Juris BOJĀRS** (Law), b. 12.02.1938, elected 24.11.1992. DHSS. *University of Latvia*. Tel.: (371) 67034413. E-mail: ilze.leonovica@lu.lv
- Andris BUIKIS** (Mathematics), b. 15.03.1939, elected 21.11.1997. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 67225674. E-mail: buikis@latnet.lv <http://www.lza.lv/scientists/buikis.htm>
- Andris CAUNE** (Archaeology), b. 27.06.1937, elected 10.11.1995. Grand Medal of the LAS (2001). DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 67810701. E-mail: lvi@lza.lv <http://www.lza.lv/scientists/CauneA.htm>
- Andrejs CĒBERS** (Physics), b. 15.12.1947, elected 26.11.1993. DPTS. *Institute of Physics, University of Latvia*. Tel.: (371) 67033767, (371) 29195961. E-mail: aceb@sal.lv; aceb@lanet.lv <http://www.lza.lv/scientists/cebers.htm>
- Pēteris CIMDIŅŠ** (Ecology), b. 21.08.1944, elected 09.04.1992. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67220725. E-mail: cimdins@inbox.lv  
<http://www.lza.lv/scientists/cimdins.htm>
- Saulvedis CIMERMANIS** (Ethnology), b. 03.07.1929, elected 09.04.1992. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 67565265. E-mail: kameel@inbox.lv
- Gunārs ČIPĒNS** (Chemistry), b. 08.11.1933, elected 17.06.1982. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67546348. E-mail: chem@lza.lv  
<http://www.lza.lv/scientists/chipens.htm>
- Maija DAMBROVA** (Pharmacy), b. 03.05.1968, elected 29.11.2012. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67702408. E-mail: md@biomed.lu.lv  
<http://www.lza.lv/scientists/dambrova.htm>
- Jurijs DEHTJARS** (Physics), b. 19.06.1947, elected 20.11.2008. DPTS. *Riga Technical University*. Tel./Fax: (371) 67089383. E-mail: dekhtyar@latnet.lv  
<http://www.lza.lv/scientists/dekhtyar.htm>
- Gunārs DUBURS** (Chemistry), b. 12.06.1934, elected 09.04.1992. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014946. E-mail: gduburs@osi.lv  
<http://www.lza.lv/scientists/duburg.htm>
- Oļģerts DUMBRĀJS** (Physics), b. 16.02.1942, elected 26.11.2009. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 26359386. E-mail: olgerts.dumbrajs@lu.lv <http://www.lza.lv/scientists/DumbrajsO.htm>
- Juris EKMANIS** (Physics), b. 02.12.1941, elected 09.04.1992. President: 01.05.2004 – 26.12.2012. DPTS. *Latvian Academy of Sciences, Institute of Physical Energetics*. Tel.: (371) 67223644, (371) 67552011, (371) 29233023. E-mail: ekmanis@lza.lv; lza@lza.lv  
<http://www.lza.lv/scientists/ekmanis.htm>

**Jekaterina ĒRENPREISA** (Biology), b. 13.02.1945, elected 20.11.2003. DCBMS. *Latvian Biomedical Research and Study Centre*. Tel.: (371) 67808220.

E-mail: [katrina@biomed.lu.lv](mailto:katrina@biomed.lu.lv) <http://www.lza.lv/scientists/ERENPR.HTM>

**Inesis FELDMANIS** (History), b. 01.08.1949, elected 20.11.2003. DHSS. *University of Latvia*. Tel.: (371) 67033825. E-mail: [inesis1@apollo.lv](mailto:inesis1@apollo.lv); [inesis.feldmanis@lu.lv](mailto:inesis.feldmanis@lu.lv)

<http://www.lza.lv/scientists/FeldmanisI.htm>

**Ruvins FERBERS** (Physics), b. 13.12.1946, elected 07.12.2006. DPTS. *University of Latvia*. Tel.: (371) 67033754. E-mail: [ferber@latnet.lv](mailto:ferber@latnet.lv) <http://www.lza.lv/scientists/ferber.htm>

**Rūsiņš Mārtiņš FREIVALDS** (Mathematics), b. 10.11.1942, elected 09.04.1992. Grand Medal of the LAS (2003). DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 67226997. E-mail: [rusins.freivalds@lumii.lv](mailto:rusins.freivalds@lumii.lv)

<http://www.lza.lv/scientists/freivalds.htm>

**Agris GAILĪTIS** (Physics), b. 18.11.1935, elected 29.11.2001. DPTS. *Institute of Physics, University of Latvia*. Tel.: (371) 28878453. E-mail: [gailitis@sal.lv](mailto:gailitis@sal.lv)

<http://www.lza.lv/scientists/GailitisA.htm>

**Dace GARDOVSKA** (Medicine), b. 30.12.1952, elected 28.11.2013. DCBMS. *Rīga Stradiņš University*. Tel.: (371) 67621730. E-mail: [dace.gardovska@rsu.lv](mailto:dace.gardovska@rsu.lv)

<http://www.lza.lv/scientists/GardovskaD.htm>

**Jānis GARDOVSKIS** (Medicine), b. 11.05.1955, elected 24.12.2006. DCBMS. *Rīga Stradiņš University*. Tel.: (371) 67409224, (371) 67069745. E-mail: [rector@rsu.lv](mailto:rector@rsu.lv)

<http://www.lza.lv/scientists/Gardovskis.htm>

**Jānis GRABIS** (Material Science), b. 18.08.1943, elected 20.11.2003. DCBMS. *Institute of Inorganic Chemistry, Rīga Technical University*. Tel.: (371) 67944711. E-mail: [grabis@nki.lv](mailto:grabis@nki.lv) <http://www.lza.lv/scientists/GrabisJ.htm>

**Elmārs GRĒNS** (Biology), b. 09.10.1935, elected 12.02.1987. Grand Medal of the LAS (1995). DCBMS. *Latvian Biomedical Research and Study Centre*. Tel.: (371) 67808201.

E-mail: [grens@biomed.lu.lv](mailto:grens@biomed.lu.lv) <http://www.lza.lv/scientists/grens.htm>

**Jānis GRUNDSPENĶIS** (Computer Science), b. 19.06.1942, elected 20.11.2003. DPTS. *Rīga Technical University*. Tel.: (371) 67089506. E-mail: [janis.grundspenkis@rtu.lv](mailto:janis.grundspenkis@rtu.lv)

<http://www.lza.lv/scientists/grundspenkis.htm>

**Viktors HAUSMANIS** (Literary Criticism), b. 06.12.1931, elected 06.04.1989. Grand Medal of the LAS (2007). DHSS. *Institute of Literature, Folklore, and Art, University of Latvia*. Tel.: (371) 67357910. E-mail: [litfom@lza.lv](mailto:litfom@lza.lv) <http://www.lza.lv/scientists/hausmanis.htm>

**Viktors IVBULIS** (Literary Criticism), b. 31.05.1933, elected 26.11.1999. Grand Medal of the LAS (2014). DHSS. *Latvian Academy of Sciences*. Tel.: (371) 67674634. E-mail: [ivbulis@lanet.lv](mailto:ivbulis@lanet.lv)

<http://www.lza.lv/scientists/ivbulis.htm>

**Ilga JANSONE** (Linguistics), b. 20.06.1958, elected 22.11.2007. DHSS. *Latvian Language Institute, University of Latvia*. Tel./Fax: (371) 67227696, (371) 29550647. E-mail: [ilgajan@lza.lv](mailto:ilgajan@lza.lv)

<http://www.lza.lv/scientists/jansoneI.htm>

**Juris JANSONS** (Mechanics), b. 16.09.1939, elected 29.11.2001. DPTS. *Institute of Polymer Mechanics, University of Latvia*. Tel.: (371) 29284330. E-mail: jansons@pmi.lv; fizteh@lza.lv <http://www.lza.lv/scientists/JANSONSJ.HTM>

**Aleksandrs JEMEĻJANOVŠ** (Agricultural Sciences), b. 05.02.1938, elected 26.11.1999. DCBMS; DAFS. *Latvian Academy of Sciences*. Tel.: (371) 67970236, (371) 29408433. E-mail: aleksandrsjemeljanovs2@gmail.com <http://www.lza.lv/scientists/jemeljanovs.htm>

**Tālavš JUNDZIS** (Politology), b. 04.10.1951, elected 23.11.2000. DHSS. *Baltic Centre for Strategic Studies, Latvian Academy of Sciences*. Tel./Fax: (371) 67227555, (371) 29489249. E-mail: bspc@lza.lv <http://www.lza.lv/scientists/JundzisT.htm>

**Benedikts KALNAČS** (Literary Criticism), b. 25.02.1965, elected 24.11.2005. DHSS. *Institute of Literature, Folklore, and Art, University of Latvia*. Tel.: (371) 67357913, (371) 29610407. E-mail: benedikts.kalnacs@lulfmi.lv <http://www.lza.lv/scientists/KalnacsB.htm>

**Viktors KALNBĒRZS** (Medicine), b. 02.07.1928, elected 09.01.1992. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 26359060. E-mail: chem@lza.lv

**Arnīš KALNIŅŠ** (Economics), b. 24.01.1935, elected 10.02.1987. DHSS; DAFS. *Latvian Academy of Sciences*. Tel.: (371) 67568319, (371) 26480029. E-mail: arnisk8@inbox.lv

**Mārtiņš KALNIŅŠ** (Chemistry), b. 25.02.1939, elected 09.04.1992. DCBMS. *Rīga Technical University*. Tel.: (371) 67089218. E-mail: martinsk@parks.lv <http://www.lza.lv/scientists/kalninsm.htm>

**Ivars KALVIŅŠ** (Chemistry), b. 02.06.1947, elected 25.11.1994. Grand Medal of the LAS (2009). DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014800, (371) 67553233. E-mail: kalvins@osi.lv <http://www.lza.lv/scientists/KALVINSI.HTM>

**Valdis KAMPARS** (Chemistry), b. 05.10.1944, elected 21.11.1997. DCBMS. *Rīga Technical University*. Tel.: (371) 67225361, (371) 29230958. E-mail: kampars@ktf.rtu.lv; lza@lza.lv <http://www.lza.lv/scientists/kampars.htm>

**Raita KARNĪTE** (Economics), b. 16.10.1949, elected 07.12.2006. DHSS. *Economy Forecast Centre Ltd*. Tel.: (371) 29411607. E-mail: raita@epc.lv <http://www.lza.lv/scientists/karnite/htm>

**Edite KAUFMANE** (Agricultural Sciences), b. 14.10.1954, elected 24.11.2011. DAFS. *Latvia State Institute of Fruit-Growing*. Tel.: (371) 63722294, (371) 29495118. E-mail: kaufmane@latnet.lv <http://www.lza.lv/scientists/kaufmane.htm>

**Aldis KĀRKLIŅŠ** (Agricultural Sciences), b. 06.02.1951, elected 28.11.2013. DCBMS; DAFS. *Latvia University of Agriculture*. Tel.: (371) 63005634, (371) 29182992. E-mail: Aldis.Karklins@llu.lv <http://www.lza.lv/scientists/karklinsa.htm>

**Jānis KLOVIŅŠ** (Biology), b. 26.09.1969, elected 28.11.2013. DCBMS. *Latvian Biomedical Research and Study Centre*. Tel.: (371) 67808003. E-mail: klovins@biomed.lu.lv <http://www.lza.lv/scientists/klovins.htm>



- Vija KLUŠA** (Medicine), b. 05.09.1940, elected 24.11.1992. DCBMS. *University of Latvia*. Tel.: (371) 67033888, (371) 29276263. E-mail: [vijaklus@latnet.lv](mailto:vijaklus@latnet.lv)  
<http://www.lza.lv/scientists/klusav.htm>
- Māris KĻAVIŅŠ** (Environmental Sciences), b. 12.03.1956, elected 26.11.1999. DCBMS. *University of Latvia*. Tel.: (371) 67334096. E-mail: [mklavins@lanet.lv](mailto:mklavins@lanet.lv)  
<http://www.lza.lv/scientists/klavinsm.htm>
- Ivars KNĒTS** (Mechanics), b. 17.09.1938, elected 09.04.1992. DPTS. *Rīga Technical University*. Tel.: (371) 67089340, (371) 29199301. E-mail: [ivars.knets@rtu.lv](mailto:ivars.knets@rtu.lv)  
<http://www.lza.lv/scientists/knetsi.htm>
- Māris KNITE** (Physics), b. 02.04.1955, elected 25.11.2004. DPTS. *Rīga Technical University*. Tel.: (371) 67089181. E-mail: [knite@latnet.lv](mailto:knite@latnet.lv) <http://www.lza.lv/scientists/KniteM.htm>
- Rihards KONDRATOVIČS** (Biology), b. 12.05.1932, elected 09.01.1992. Grand Medal of the LAS (2006). DCBMS. *Rhododendron Experimental and Breeding Nursery "Babīte", University of Latvia*. Tel./Fax: (371) 67913127. E-mail: [Rihards.Kondratovics@lu.lv](mailto:Rihards.Kondratovics@lu.lv)  
<http://www.lza.lv/scientists/kondratr.htm>
- Jevgeņijs KOTOMINS** (Physics), b. 20.09.1949, elected 24.11.2011. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 6718 7480. E-mail: [kotomin@latnet.lv](mailto:kotomin@latnet.lv)  
<http://www.lza.lv/scientists/kotomine.htm>
- Jānis KRASTIŅŠ** (Architecture), b. 23.06.1943, elected 25.11.1994. Grand Medal of the LAS (1998). DHSS. *Rīga Technical University*. Tel.: (371) 67089115, (371) 26406066. E-mail: [janis.krastins\\_1@rtu.lv](mailto:janis.krastins_1@rtu.lv) <http://www.lza.lv/scientists/krastinsj.htm>
- Oļģerts KRASTIŅŠ** (Economics), b. 27.08.1931, elected 10.11.1995. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 67273489. E-mail: [okrast@inbox.lv](mailto:okrast@inbox.lv)  
<http://www.lza.lv/scientists/KrastinsO.htm>
- Andris KRŪMIŅŠ** (Physics), b. 31.03.1943, elected 29.11.2001. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67187816. E-mail: [krumins@latnet.lv](mailto:krumins@latnet.lv)  
<http://www.lza.lv/scientists/kruminsa.htm>
- Juris KRŪMIŅŠ** (Demography), b. 17.11.1947, elected 20.11.2008. DHSS. *University of Latvia*. Tel.: (371) 67034794. E-mail: [Juris.Krumins@lu.lv](mailto:Juris.Krumins@lu.lv)  
<http://www.lza.lv/scientists/kruminsj.htm>
- Maija KŪLE** (Philosophy), b. 21.04.1951, elected 22.11.1996. DHSS. *Institute of Philosophy and Sociology, University of Latvia*. Tel.: (371) 28385810. E-mail: [maija.kule@lu.lv](mailto:maija.kule@lu.lv)  
<http://www.lza.lv/scientists/kulem.htm>
- Ēriks KUPČE** (Chemistry), b. 11.10.1955, elected 24.11.2011. Grand Medal of the LAS (2008). DCBMS. *Latvian Institute of Organic Synthesis. Bruker UK Limited, UK*. Tel.: (44) (0) 24 7685 5200. E-mail: [eriks.kupce@bruker.co.uk](mailto:eriks.kupce@bruker.co.uk)  
[http://www.biomedexperts.com/Profile.bme/757384/Eriks\\_Kupce](http://www.biomedexperts.com/Profile.bme/757384/Eriks_Kupce)
- Janina KURSĪTE-PAKULE** (Literary Criticism), b. 08.03.1952, elected 21.11.1997. DHSS. *University of Latvia*. Tel.: (371) 67087431. E-mail: [Janina.Kursite@saeima.lv](mailto:Janina.Kursite@saeima.lv)  
[kursite@hotmail.com](mailto:kursite@hotmail.com) <http://www.lza.lv/scientists/kursite.htm>

- Ivars LĀCIS** (Physics), b. 11.02.1949, elected 23.11.2000. DPTS. *University of Latvia*.  
Tel.: (371) 29245467, (371) 67261068. E-mail: [Ivars.Lacis@lu.lv](mailto:Ivars.Lacis@lu.lv)  
<http://www.lza.lv/scientists/lacisi.htm>
- Egons LAVENDELIS** (Mechanics), b. 20.12.1934, elected 06.04.1989. Grand Medal of the LAS (1994). DPTS. *Rīga Technical University*. Tel.: (371) 29255019. E-mail: [lavendel@parks.lv](mailto:lavendel@parks.lv) <http://www.lza.lv/scientists/lavendelis.htm>
- Oļģerts LIELAUSIS** (Physics), b. 02.09.1930, elected 24.11.1992. Grand Medal of the LAS (1999). DPTS. *Institute of Physics, University of Latvia*. Tel.: (371) 26333689.  
E-mail: [mbroka@sal.lv](mailto:mbroka@sal.lv); [lielausis@sal.lv](mailto:lielausis@sal.lv) <http://www.lza.lv/scientists/lielausis.htm>
- Edwards LIEPIŅŠ** (Chemistry), b. 01.07.1944, elected 27.11.1998. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014900. E-mail: [edv@osi.lv](mailto:edv@osi.lv)  
<http://www.lza.lv/scientists/LIEPINSE.HTM>
- Dace MARKUS** (Linguistics), b. 13.11.1950, elected 23.11.2000. DHSS. *Rīga Teacher Training and Educational Management Academy*. Tel.: (371) 67808010, (371) 26442598.  
E-mail: [rpiva@rpiva.lv](mailto:rpiva@rpiva.lv); [markus@latnet.lv](mailto:markus@latnet.lv) <http://www.lza.lv/scientists/markusd.htm>
- Imants MATĪSS** (Mechanics), b. 29.04.1935, elected 09.01.1992. DPTS. *Certification Centre, Latvian Academy of Sciences*. Tel.: (371) 67225996. Tel./Fax: (371) 67212807.  
E-mail: [cercn@latnet.lv](mailto:cercn@latnet.lv)  
<http://www.lza.lv/scientists/matiss.htm>
- Tālis MILLERS** (Chemistry), b. 04.01.1929, elected 09.01.1992. President: 01.03.1994 – 28.02.1998. Grand Medal of the LAS (2002). DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67225361. E-mail: [talism@inbox.lv](mailto:talism@inbox.lv) <http://www.lza.lv/scientists/millerst.htm>
- Ruta MUCENIECE** (Medicine), b. 24.03.1950, elected 20.11.2008. DCBMS. *University of Latvia*. Tel.: (371) 67362499. E-mail: [Ruta.Muceniece@lu.lv](mailto:Ruta.Muceniece@lu.lv)  
<http://www.lza.lv/scientists/MucenieceR.htm>
- Ēvalds MUGURĒVIČS** (Archaeology), b. 06.04.1931, elected 09.04.1992. Grand Medal of the LAS (2011). DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 26750623. E-mail: [mugurevics@e-apollo.lv](mailto:mugurevics@e-apollo.lv); [lvi@lza.lv](mailto:lvi@lza.lv)  
<http://www.lza.lv/scientists/mugurevics.htm>
- Indriķis MUIŽNIEKS** (Biology), b. 09.07.1953, elected 23.11.2000. DCBMS. *University of Latvia*. Tel.: (371) 67034401. E-mail: [Indriks.Muiznieks@lu.lv](mailto:Indriks.Muiznieks@lu.lv)  
<http://www.lza.lv/scientists/muizniek.htm>
- Modra MUROVSKA** (Medicine), b. 16.07.1949, elected 29.11.2012. DCBMS. *Augusts Kirhenšteins Institute of Microbiology and Virology, Rīga Stradiņš University*. Tel.: (371) 67426197, (371) 2921808. E-mail: [modra.murovska@rsu.lv](mailto:modra.murovska@rsu.lv); [modra@latnet.lv](mailto:modra@latnet.lv)  
<http://www.lza.lv/scientists/Murovska.htm>
- Ieva OSE** (Archaeology), b. 08.06.1961, elected 25.11.2004. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 67034509. E-mail: [ieva@lza.lv](mailto:ieva@lza.lv)  
<http://www.lza.lv/scientists/OseI.htm>
- Andris OZOLS** (Physics), b. 06.12.1944, elected 25.11.2010. DPTS. *Rīga Technical University*. Tel.: (371) 67089456, (371) 67089201. E-mail: [aozols@latnet.lv](mailto:aozols@latnet.lv)  
<http://www.lza.lv/scientists/ozolsa.htm>

- Jānis PRIEDKALNS** (Medicine), b. 28.03.1934, elected 27.11.1998. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 26496128. E-mail: jpuika@chariot.net.au  
<http://www.lza.lv/scientists/priedkalns.htm>
- Pauls PUMPĒNS** (Biology), b. 21.10.1947, elected 09.04.1992. Grand Medal of the LAS (2012). DCBMS. *Latvian Biomedical Research and Study Centre*. Tel.: (371) 67808214. E-mail: paul@biomed.lu.lv  
<http://www.lza.lv/scientists/pumpens.htm>
- Juris PURĀNS** (Physics), b. 29.08.1952, elected 28.11.2013. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67251691. E-mail: purans@cfi.lu.lv  
<http://www.lza.lv/scientists/puransj.htm> <http://www.dragon.lv/exafs/>
- Īzaks RAŠĀLS** (Biology), b. 29.06.1947, elected 29.11.2001. DCBMS; DAFS. *Institute of Biology, University of Latvia*. Tel.: (371) 67945435. E-mail: izaks@email.lubi.edu.lv  
<http://www.lza.lv/scientists/RashalI.htm>
- Leonīds RIBICKIS** (Power Engineering), b. 24.08.1947, elected 22.11.2007. DPTS. *Rīga Technical University*. Tel.: (371) 67089300. E-mail: leonids.ribickis@rtu.lv  
<http://www.lza.lv/scientists/Ribickis.htm>
- Rolands RIKARDS** (Mechanics), b. 15.12.1942, elected 21.11.1997. DPTS. *Rīga Technical University*. Tel.: (371) 67089124. E-mail: rikards@latnet.lv  
<http://www.lza.lv/scientists/rikardsr.htm>
- Baiba RIVŽA** (Economics), b. 01.12.1949, elected 26.11.1999. DAFS; DHSS. *Latvia University of Agriculture*. Tel.: (371) 63023739, (371) 29254469. E-mail: baiba.rivza@llu.lv  
<http://www.lza.lv/scientists/rivzab.htm>
- Kārlis ROCĒNS** (Mechanics), b. 03.03.1939, elected 21.11.1997. DPTS. *Rīga Technical University*. Tel.: (371) 67089184. E-mail: rocensk@latnet.lv  
<http://www.lza.lv/scientists/rocensk.htm>
- Rafails ROZENTĀLS** (Medicine), b. 27.09.1937, elected 23.11.2000. DCBMS. *P. Stradiņš Clinical University Hospital*. Tel.: (371) 29241308. E-mail: rafails.rozentals@stradini.lv; Rafail\_Rozental@transplantation.lv  
<http://www.lza.lv/scientists/rosentalr.htm>
- Uldis SEDMALIS** (Chemistry), b. 22.05.1933, elected 09.04.1992. DCBMS. *Rīga Technical University*. Tel.: (371) 67089266. E-mail: gsedmale@kf.rtu.lv  
<http://www.lza.lv/scientists/Sedmalis.HTM>
- Andrejs SILIŅŠ** (Physics), b. 12.10.1940, elected 09.01.1992. DPTS. *Latvian Academy of Sciences*. Tel.: (371) 67211405. E-mail: silins@lza.lv <http://www.lza.lv/scientists/silinsa.htm>
- Nikolajs SJAKSTE** (Biology), b. 11.05.1955, elected 25.11.2010. DCBMS. *University of Latvia*. Tel.: (371) 29198804. E-mail: Nikolajs.Sjakste@lu.lv  
<http://www.lza.lv/scientists/SjaksteN.htm>
- Linards SKUJA** (Physics), b. 08.02.1952, elected 20.11.2003. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67260756. E-mail: skuja@latnet.lv  
<http://www.lza.lv/scientists/skujal.htm>
- Valentīna SKUJIŅA** (Linguistics), b. 02.10.1937, elected 21.11.1997. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 67565934. <http://www.lza.lv/scientists/skujina.htm>

- Ojārs SPĀRĪTIS** (Art Studies), b. 28.11.1955, elected 25.11.2004. DHSS. President: 27.12.2012–. *Latvian Academy of Sciences*. Tel.: (371) 67225361. E-mail: lza@lza.lv <http://www.lza.lv/scientists/Sparitis.htm>
- Jānis SPĪGULIS** (Physics), b. 09.05.1950, elected 29.11.2012. DPTS. *University of Latvia*. Tel.: (371) 67228249. E-mail: Janis.Spigulis@lu.lv; janispi@latnet.lv <http://www.lanet.lv/~spigulis>
- Jānis STRADIŅŠ** (Chemistry), b. 10.12.1933, elected 06.07.1973. President: 01.03.1998 – 30.04.2004. Grand Medal of the LAS (1993). DCBMS. *Latvian Academy of Sciences; Latvian Institute of Organic Synthesis; Institute of History of Latvia, University of Latvia*. Tel.: (371) 67213663, (371) 67555985. E-mail: stradins@lza.lv <http://www.lza.lv/scientists/stradinsj.htm>
- Andris STRAKOVŠ** (Chemistry), b. 27.06.1934, elected 10.11.1995. DCBMS. *Rīga Technical University*. Tel.: (371) 67560615. E-mail: strakovs@latnet.lv <http://www.lza.lv/scientists/strakovsa.htm>
- Aivars STRANGA** (History), b. 15.06.1954, elected 26.11.2009. DHSS. *University of Latvia*. Tel.: (371) 67033825. E-mail: aivars.stranga@lu.lv
- Pēteris ŠIPKOVŠ** (Power Engineering), b. 16.06.1944, elected 25.11.2010. DPTS. *Institute of Physical Energetics*. Tel.: (371) 67553537. E-mail: shipkovs@edi.lv <http://www.lza.lv/scientists/Shipkovs.HTM>
- Andris ŠTERNBERGS** (Physics), b. 13.05.1944, elected 24.11.2005. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67187810. E-mail: stern@lanet.lv <http://www.lza.lv/scientists/sternberg.htm>
- Kurts ŠVARCS** (Physics), b. 27.04.1930, elected 06.12.1990. Grand Medal of the LAS (2010). *Darmstadt, Deutschland*. Tel.: (496159) 712169. E-mail: k.schwartz@gsi.de
- Ivars TĀLE** (Physics), b. 23.01.1936, elected 22.11.1996. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67260639. E-mail: iatale@latnet.lv [http://www.lza.lv/scientists/TALE/I\\_TALERE.HTM](http://www.lza.lv/scientists/TALE/I_TALERE.HTM)
- Vitauts TAMUŽS** (Mechanics), b. 02.12.1935, elected 09.01.1992. Grand Medal of the Latvian Academy of Sciences (2008). DPTS. *Institute of Polymer Mechanics, University of Latvia*. Tel.: (371) 67543306. E-mail: tamuzs@pmi.lv <http://www.lza.lv/scientists/tamuzsv.htm>
- Gundaris TETERS** (Mechanics), b. 21.08.1928, elected 24.11.1992. DPTS. *Institute of Polymer Mechanics, University of Latvia*. Tel.: (371) 67543307, (371) 29165252. <http://www.lza.lv/scientists/tetersg.htm>
- Kalvis TORGĀNS** (Law), b. 31.03.1939, elected 21.11.1997. DHSS. *University of Latvia*. Tel.: (371) 67034527. E-mail: kalvis.torgans@lu.lv <http://www.lza.lv/scientists/torgans.htm>
- Arnīs TREIMANIS** (Chemistry), b. 19.02.1940, elected 20.11.2008. DCBMS; DAFS. *Latvian State Institute of Wood Chemistry*. Tel.: (371) 67551559, (371) 29258122. E-mail: arnis.treimanis@edi.lv <http://www.lza.lv/scientists/treimanisa.htm>
- Juris Tāivaldis URTĀNS** (History of Culture), b. 15.12.1952, elected 24.11.2011. DHSS. *Latvian Academy of Culture*. Tel.: (371) 67114800; (371) 29485326. E-mail: urtans@lka.edu.lv [http://www.tradicijas.lv/?page\\_id=743](http://www.tradicijas.lv/?page_id=743)

- Raimonds VALTERS** (Chemistry), b. 27.05.1938, elected 09.04.1992. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67220725, (371) 67089231. E-mail: rvalters@latnet.lv <http://www.lza.lv/scientists/valtersr.htm>
- Edvins VANAGS** (Economics), b. 12.07.1938, elected 26.11.1999. DHSS. *Latvian Academy of Sciences*. E-mail: inga.vilka@ppk.lv <http://www.lza.lv/scientists/vanagse.htm>
- Vera VĀVERE** (Literary Criticism), b. 31.12.1929, elected 09.04.1992. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 28449816. E-mail: litfom@lza.lv
- Nikolajs VEDERNIKOVŠ** (Chemistry), b. 08.02.1937, elected 24.11.1992. DCBMS; DAFS. *Latvian State Institute of Wood Chemistry*. Tel.: (371) 67553760. E-mail: ved@edi.lv <http://www.lza.lv/scientists/vedernikov.htm>
- Grigorijs VEINBERGS** (Chemistry), b. 17.07.1941, elected 25.11.2010. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014941. E-mail: veinberg@osi.lv <http://www.lza.lv/scientists/veinberg.htm>
- Andrejs VEISBERGS** (Linguistics), b. 22.02.1962, elected 28.11.2013. DHSS. *University of Latvia*. Tel.: (371) 67034816. E-mail: anveis@lanet.lv; andrejs.veisbergs@lu.lv <http://www.lza.lv/scientists/Veisbergs.htm>
- Arnis VĪKSNA** (Medicine), b. 25.02.1942, elected 29.11.2001. DCBMS. *University of Latvia*. Tel.: (371) 67034497. E-mail: Arnis.Viksna@lu.lv <http://www.lza.lv/scientists/ViksnaA.htm>
- Jānis VĪKSNE** (Biology), b. 18.09.1936, elected 24.11.2005. DCBMS. *Institute of Biology, University of Latvia*. Tel.: (371) 67945437, (371) 67945393. E-mail: ornlab@latnet.lv <http://www.lza.lv/scientists/ViksneJ.htm>
- Vaira VĪĶE-FREIBERGA** (Psychology, Folklore Studies), b. 01.12.1937, elected 05.07.1999. Grand Medal of the LAS (1997). *Rātslaukums 7, Rīga, LV 1900*. Tel.: (371) 67092191. E-mail: daina.lasmane@president.lv <http://www.president.lv>
- Jānis VOLKOLĀKOVS** (Medicine), b. 28.04.1931, elected 25.11.1994. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67605546. E-mail: chem@lza.lv <http://www.lza.lv/scientists/volkolak.htm>
- Juris ZAKIS** (Physics), b. 04.11.1936, elected 06.12.1990. DPTS. *Higher School of Social Technologies*. Tel.: (371) 29299188. E-mail: juris.zakis@apollo.lv <http://www.lza.lv/scientists/zakisj.htm>
- Andris ZICMANIS** (Chemistry), b. 21.04.1941, elected 22.11.2007. DCBMS. *University of Latvia*. Tel.: (371) 67377436. E-mail: zicmanis@latnet.lv <http://www.lza.lv/scientists/ZICMANIS.HTM>
- Jānis ZILGALVIS** (Art), b. 23.05.1955, elected 29.11.2012. DHSS. *State Inspection for Heritage Protection of Latvia*. Tel.: (371) 67224519, (371) 29451090. E-mail: janis.zilgalvis@inbox.lv <http://www.ln.lv/mvi/lv/zilgalvis.htm>
- Pēteris ZVIDRIŅŠ** (Economics), b. 31.05.1943, elected 09.04.1992. DHSS. *University of Latvia*. Tel.: (371) 67034794, (371) 29103629. E-mail: peteris.zvidrins@lu.lv <http://www.lza.lv/scientists/zvidrins.htm>

## HONORARY MEMBERS

**Gunārs ASARIS** (Architecture), b. 23.06.1934, elected 29.11.2001. DHSS. *Rīga Technical University. Latvia. Tel.: (371) 67089256; (371) 26557533.*  
*http://www.makslinieki.lv/profile/1005/*

**Biruta BAUMANE** (Art), b. 06.06.1922, elected 25.11.1994. DHSS. *Latvia. Tel.: (371) 67459444.* *http://www.makslinieki.lv/profile/2211/*

**Alberts BELS** (Literature), b. 06.10.1938, elected 26.11.1999. DHSS. *Latvia. Tel.: (371) 67614105, (371) 22019638.* *E-mail: albertsbels@apollo.lv*  
*http://lv.wikipedia.org/wiki/Alberts\_Bels*

**Uldis BĒRZIŅŠ** (Literature), b. 17.05.1944, elected 24.11.1993. DHSS. *Latvia. Tel.: (371) 67210428, (371) 29397630.* *E-mail: uldis.eba@gmail.com*  
*http://literature.lv/lv/dbase/autors.php?id=29*

**Ilmārs BLUMBERGS** (Art), b. 06.09.1943, elected 23.11.2000. DHSS. *Latvia. Tel.: (371) 67562576.* *E-mail: ilmars@blumbergs.cc* *http://www.blumbergs.lv/*

**Leons BRIEDIS** (Literature), b. 16.12.1949, elected 21.11.2007. DHSS. *Latvia. Tel.: (371) 27012711.* *E-mail: kentaurXXI@inbox.lv*  
*http://www.literature.lv/lv/dbase/autors.php?id=144*

**Raisa DENISOVA** (Anthropology), b. 30.08.1930, elected 27.11.1998. DHSS. *Latvia. Tel.: (371) 67451842, (371) 29818171.* *E-mail: lvi@lza.lv*

**Roalds DOBROVENSĶIS** (Literature), b. 02.09.1936, elected 28.11.2002. DHSS. *Latvia. Tel.: (371) 29419203.* *E-mail: veroa@inbox.lv* *http://www.makslinieki.lv/profile/85/*

**Arta DUMPE** (Art), b. 26.05.1933, elected 25.11.2010. DAFS. *Latvia. Tel.: (371) 67674634.* *E-mail: ivbulis@lanet.lv* *http://www.gallery.lv/Telnieki/Dumpe/cv.html*

**Uldis DUMPIS** (Art), b. 03.10.1943, elected 20.11.2008. DHSS. *Latvia. Tel.: (371) 67006304.* *E-mail: info@teatris.lv* *http://www.makslinieki.lv/profile/Uldis-Reinis-Dumpis/*

**Maija EIFELDE** (Art), b. 02.01.1939, elected 29.11.2001. DHSS. *Latvia.*  
*http://www.music.lv/Composers/Einfelde/default\_L.htm*

**Guntis GAILĪTIS** (Art), b. 11.02. 1949, elected 24.11. 2011. DHSS. *Latvia. Tel.: (371) 29244251.* *E-mail: info@rlb.lv*  
*http://www.opera.lv/lv/opera/makslinieki/izrazu-veidotaji/rezisoru/guntis-gailitis*

**Oskars GERTS** (Journalistics), b. 28.12.1940, elected 21.11.1997. DHSS. *Latvia. Tel.: (371) 29491340.* *E-mail: gertsoskars@gmail.com*

**Guntars GODIŅŠ** (Literature), b. 26.04.1958, elected 28.11.2013. DHSS. *Tel.: (371) 26143924.* *E-mail: guntars.godins@inbox.lv* *http://lv.wikipedia.org/wiki/Guntars\_God*

**Pēteris GUĻĀNS** (Economics), b. 08.09.1920, elected 20.11.2003. DHSS. *Institute of Economics, Latvian Academy of Sciences. Tel.: (371) 67567909, (371) 26027055.* *E-mail: gulans@apollo.lv*

- Alvis HERMANIS** (Art), b. 27.04.1965, elected 22.11.2007. DHSS. *The New Rīga Theatre, Latvia.* Tel.: (371) 67283323. E-mail: jrt@jrt.lv [http://lv.wikipedia.org/wiki/Alvis\\_Hermanis](http://lv.wikipedia.org/wiki/Alvis_Hermanis)
- Dainis ĪVĀNS** (Literature), b. 25.09. 1955, elected 29. 11. 2012. DHSS. *Latvia.* Tel.: (371) 26554414. E-mail: dainis.ivans@inbox.lv [http://www.lv.wikipedia.org/wiki/Dainis\\_Īvāns](http://www.lv.wikipedia.org/wiki/Dainis_Īvāns)
- Valdis JĀKOBSONS** (Economics), b. 04.06.1938, elected 22.11.1996. DHSS. *Latvia.* Tel.: (371) 67326015. E-mail: valdisjakobsons@inbox.lv
- Anna JURKĀNE** (History), b. 30.06.1944, elected 28.11.2002. DHSS. *Latvia.* Tel.: (371) 67972376, (371) 20278317. E-mail: direktore.tmr@apollo.lv
- Imants KALNIŅŠ** (Art), b. 26.05.1941, elected 22.11.1996. DHSS. *The Latvian Composers Union, Latvia.* Tel.: (371) 66901070. E-mail: komponisti.lv@gmail.com [http://en.wikipedia.org/wiki/Imants\\_Kalniņš](http://en.wikipedia.org/wiki/Imants_Kalniņš)
- Tõnu KARMA** (Linguistics), b. 01.05.1924, elected 10.11.1995. DHSS. *Latvia.* Tel.: (371) 67628828. E-mail: ruuta.karma@e-apollo.lv <http://www.livones.net/personalijas/?raksts=8163>
- Kristaps Juris KEGGI** (Medicine), b. 09.08.1934, elected 05.07.1990. DCBMS. *Yale School of Medicine, New Haven, USA.* Tel.: 203- 737-5656 E-mail: kristaps.keggi@yale.edu [http://medicine.yale.edu/ortho/people/kristaps\\_keggi.profile](http://medicine.yale.edu/ortho/people/kristaps_keggi.profile)
- Gidons KRĒMERS** (Art), b. 27.02.1947, elected 25.11.1999. DHSS. *KREMERata Baltica, Latvia.* Tel.: (371) 67224055. E-mail: kb@kremerataltica.lv [http://en.wikipedia.org/wiki/Gidon\\_Kremer](http://en.wikipedia.org/wiki/Gidon_Kremer)
- Andris KRONBERGS** (Architecture), b. 11. 01. 1951, elected 28. 11. 2013. DHSS. *Latvia.* Tel. : (371) 67225852. E-mail: arhis@arhis.lv <http://www.arhis.lv/>
- Juris KRONBERGS** (Literature), b. 09.08.1946, elected 20.11.2003. DHSS. *Sweden.* Tel.: (4673) 5676229, (371) 26050561. E-mail: juris.kronbergs@comhem.se <http://www.literature.lv/lv/dbase/autors.php?id=41>
- Imants LANCMANIS** (History of Art), b. 29.07.1941, elected 09.01.1992. Grand Medal of the LAS (2004). DHSS. *Rundāle Castle Museum, Latvia.* Tel.: (371) 63962272, (371) 29454360. E-mail: lancmanis@rundale.net
- Jānis LATVIETIS** (Agricultural Sciences), b. 15.02.1928, elected 09.01.1992. DCBMS; DAFS. *Latvia University of Agriculture.* Tel.: (371) 63081163, (371) 29279269. E-mail: ilzelatviete@gmail.com <http://www.lza.lv/scientists/latvietisj.htm>
- Jāzepts LOČMELIS** (Computer Science), b. 12.09.1928, elected 23.11.2000. DPTS. *Latvia.* Tel.: (371) 29254511. <http://www.lza.lv/scientists/LocmelisJ.htm>
- Aina NAGOBADS-ĀBOLA** (Politology), b. 09.06.1920, elected 24.11.2011. DHSS. *Latvia.* E-mail: baibapaulsone@inbox.lv <http://www.am.gov.lv/data/fili/i-izstade/Content/Data/Nagobada/index.html>



**Aleksejs NAUMOVŠ** (Art), b. 10.01.1955, elected 28.11.2013. DHSS. *Art Academy of Latvia*. Tel.: (371) 67326068. E-mail: [aleksejs.naumovs@lma.lv](mailto:aleksejs.naumovs@lma.lv)  
<http://www.gallery.lv/Naumovs/>

**Andris NELSONS** (Art), b. 18.11. 1978, elected 29.11. 2012. DHSS. *Latvia*. Tel.: (371) 67073715. E-mail: [info@opera.lv](mailto:info@opera.lv) <http://www.andrisnelsons.com/>

**Jānis OSIS** (Computer Science), b. 06.04.1929, elected 27.11.1998. DPTS. *Riga Technical University*. Tel.: (371) 67089523. E-mail: [janis.osis@rtu.lv](mailto:janis.osis@rtu.lv)  
<http://www.lza.lv/scientists/osisj.htm>

**Jānis Andris OSIS** (Art), b. 04.10.1943, elected 28.11.2002. DHSS. *Art Academy of Latvia*. Tel.: (371) 67326068. E-mail: [jaosis@inbox.lv](mailto:jaosis@inbox.lv) <http://www.gallery.lv/Osis/default.htm>

**Raimonds PAULS** (Art), b. 12.01.1936, elected 24.11.1992. DHSS. *The Latvian Composers Union*. Tel.: (371) 66901070. E-mail: [komponisti.lv@gmail.com](mailto:komponisti.lv@gmail.com)  
<http://www.raimondspauls.lv/en>

**Jānis PETERS** (Literature), b. 30.06.1939, elected 06.12.1990. DHSS. *Latvia*. Tel.: (371) 67339350. <http://www.literature.lv/lv/dbase/autors.php?id=249>

**Jāzeps PĪGOZNIS** (Art). b. 15.09. 1934, elected 26.11.2009. DHSS. *Latvia*. Tel.: (371) 67457888; (371) 26469245. E-mail: [jazespigoznis@inbox.lv](mailto:jazespigoznis@inbox.lv)  
<http://www.gallery.lv/Pigoznis/default.htm>

**Indulis Ojārs RANKA** (Art), b. 15.04.1934, elected 24.11.1992. DHSS. *Latvia*. Tel.: (371) 25150916. E-mail: [marcat@inbox.lv](mailto:marcat@inbox.lv) <http://www.gallery.lv/Ranka/kredo.htm>

**Juris RUBENIS** (Theology), b. 20.12.1961, elected 28.11.2002. DHSS. *Latvia*. Tel.: (371) 29434906. E-mail: [info@elijasnams.lv](mailto:info@elijasnams.lv)

**Valdis RŪMNIĒKS** (Literature), b. 06.10.1951, elected 24.11.2005. DHSS. *Latvia*. Tel.: (371) 29491073. E-mail: [valdis.rumniesks@gmail.com](mailto:valdis.rumniesks@gmail.com) <http://www.makslinieki.lv/profile/413/>

**Māris SIRMAIS** (Art), b. 27.06.1969, elected 24.11.2005. DHSS. *State choir "Latvija"*. Tel.: (371) 67223839. E-mail: [info@koris.lv](mailto:info@koris.lv)  
[http://lv.wikipedia.org/wiki/Māris\\_Sirmais](http://lv.wikipedia.org/wiki/Māris_Sirmais)

**Knuts SKUJENIĒKS** (Literature), b. 05.09.1936, elected 09.01.1992. DHSS. *Latvia*. Tel.: (371) 67980189, (371) 26226668 <http://www.literature.lv/lv/dbase/autors.php?id=50>  
<http://www.makslinieki.lv/profile/Knuts-Skujenieks/>

**Zigmunds SKUJŅŠ** (Literature), b. 25.12.1926, elected 27.11.1998. DHSS. *Latvia*. Tel.: (371) 67339428. <http://www.makslinieki.lv/profile/282/>

**Džemma SKULME** (Art), b. 20.09.1925, elected 24.11.1992. DHSS. *Latvia*. Tel.: (371) 67519086. [http://lv.wikipedia.org/wiki/Džemma\\_Skulme](http://lv.wikipedia.org/wiki/Džemma_Skulme)

**Zbigņevs STANKEVIČS** (Theology), b. 15.02.1955, elected 29.11.2012. DHSS. *Mazā Pils iela 2a, Rīga, LV 1050, Latvia*. Tel.: (371) 67227266.  
E-mail: [metropolitan@catholic.lv](mailto:metropolitan@catholic.lv) <http://www.catholic.lv>



**Jānis STREIČS** (Art), b. 26.09.1936, elected 25.11.1999. DHSS. *Latvia. Tel.:* (371) 67339569, (371) 29444308. *E-mail:* janis@streich.lv  
<http://www.makslinieki.lv/profile/Jānis-Streich/>

**Jānis STRUPULIS** (Art), b. 28.01.1949, elected 25.11.1994. The Rainis Prize of the LAS (2012). DHSS. *Latvia. Tel.:* (371) 26811186. *E-mail:* janis.strupulis@gmail.com  
<http://www.makslinieki.lv/profile/Jānis-Strupulis/>

**Tomas TRANSTRÖMER** (Literature), b. 14.04. 1931, elected 24.11. 2011. Nobel Prize in the Literature (2011). DHSS. *Sweden. Tel.:* (00468) 6420445. *E-mail:* tom.tran@comhen.se  
[http://lv.wikipedia.org/wiki/Tomas\\_Transtr%C4%93mers](http://lv.wikipedia.org/wiki/Tomas_Transtr%C4%93mers)

**Andris VĀRPA** (Art), b. 19.02.1950, elected 20.11.2003. DHSS. *Latvia. Tel.:* (371) 29111420. *E-mail:* andrisvarpa@inbox.lv  
<http://www.makslinieki.lv/profile/3079>

**Pēteris VASKS** (Art), b. 16.04.1946, elected 25.11.1994. DHSS. *Latvia. Tel.:* (371) 67629960. *E-mail:* peterisv@inbox.lv  
<http://www.ondine.net/?cid=4.2&oid=583>

**Andris VILKS** (Bibliography), b. 16.05.1957, elected 28.11.2013. DHSS. *National Library of Latvia. Tel.:* (371) 67365250. *E-mail:* andris.vilks@lnb.lv  
<http://lnb.lv/lv/par-lnb/vaditajs>

**Vilis VĪTOLS** (Engineering Sciences), b. 14.02.1934, elected 26.11.2009. DPTS. *Latvia. Tel.:* (371) 67289535. *E-pasts:* vilis.vitols@latnet.lv  
[http://www.latvijaslaudis.lv/users/vitols\\_vilis](http://www.latvijaslaudis.lv/users/vitols_vilis)

**Māra ZĀLĪTE** (Literature), b. 18.02.1952, elected 27.11.1998. DHSS. *Latvian Writer's Union.* <http://www.marazalite.lv/>

**Kārlis ZARIŅŠ** (Art), b. 06.07.1930, elected 29.11.2001. DHSS. *Latvia. Tel.* (371) 67622357. <http://www.jvlma.lv/english/readers/4174.html>

**Uldis ZEMZARIS** (Art), b. 24.02.1928, elected 20.11.2008. DHSS. *Latvia. Tel.:* (371) 67339421. <http://www.makslinieki.lv/profile/332/>

**Viktors ZĒBERGS** (Power Engineering), b. 05.07.1926, elected 07.12.2006. DPTS. *Institute of Physical Energetics, Latvia. Tel.:* (371) 67558692. *E-mail:* zebergs@edi.lv  
<http://www.lza.lv/scientists/zebergsv.htm>

**Namejs ZELTIŅŠ** (Power Engineering), b. 12.08.1935, elected 25.11.2010. DPTS. *Institute of Physical Energetics, Latvia. Tel.:* (371) 67558636, (371) 29363105. *SKYPE:* namejs.zeltins. *E-pasts:* zeltinsh@edi.lv  
<http://www.lza.lv/scientists/zeltinshn.htm>

**Anna ŽĪGURE** (Literature), b. 25.08.1948, elected 24.11.2005. DHSS. *Latvia. Tel.:* (371) 67760346. *E-mail:* veleda48@gmail.com  
<http://www.makslinieki.lv/profile/340/>

## FOREIGN MEMBERS

**Aleksey ANDRONOV** (Linguistics), b. 12.12.1972, elected 22.11.2007. DHSS. *Russia*.  
Tel.: (7-812) 4761142. E-mail: [baltistica@gmail.com](mailto:baltistica@gmail.com)  
<http://www.genling.nw.ru/Staff?Andronov/main.htm>

**Norbert ANGERMANN** (History), b. 02.11.1936, elected 24.11.1992. DHSS. *Deutschland*.  
Tel.: (49-41) 814820.

**Nikolajs BALABKINS** (Economics), b. 17.07.1926, elected 27.06.1991. DHSS. *College of Business and Economics, Lehigh University, USA*. Tel.: (1-610) 7583420. E-mail: [nib2@lehigh.edu](mailto:nib2@lehigh.edu)

**Jūras BANYS** (Physics), b. 30.12.1962, elected 28.11.2013. DPTS. *Vilnius University, Lithuania*. Tel.: (370-5) -2687015. E-mail: [rector@vu.lt](mailto:rector@vu.lt)  
<http://lma.lt/intranetas/index.php?m=profile&user=900>

**Friedrich BENNINGHOVEN** (History), b. 09.03.1925, elected 26.11.1993. DHSS. *Deutschland*. E-mail: [humana@lza.lv](mailto:humana@lza.lv)

**Gunārs BIRKERTS** (Architecture), b. 17.01.1925, elected 27.06.1991. Grand Medal of the LAS (2000). DHSS. *Gunnar Birkerts, FAIA, USA*. Tel.: (7-812) 354091. E-mail: [gunnarbirk@aol.com](mailto:gunnarbirk@aol.com)

**Pēteris BOLŠAITIS** (Chemistry), b. 12.07.1937, elected 05.07.1990. DCBMS. *Latvia*.  
Tel.: (371) 67283955, (371) 29101062. E-mail: [irapeteris@aol.com](mailto:irapeteris@aol.com)

**Dzintra BONDA** (Linguistics), b. 01.09.1940, elected 29.11.2001. DHSS. *USA*. Tel.: (1-614) 5380235, (1-614) 5015019. E-mail: [bond@ohiou.edu](mailto:bond@ohiou.edu)

**Nicodemus E. BOYER** (Chemistry), b. 01.06.1925, elected 10.11.1995. DCBMS. *Delta Scientific Consultants, USA*. Tel.: (1-269) 2781098. E-mail: [studeophile@live.com](mailto:studeophile@live.com)

**Michael BRANCH** (Linguistics), b. 24.03.1940, elected 23.11.2000. DHSS. *UK*. E-mail: [MBr1504092@aol.com](mailto:MBr1504092@aol.com) <http://www.ssees.ucl.ac.uk>

**Herman BRANOVER** (Physics), b. 13.12.1931, elected 09.01.1992. DPTS. *USA*. Tel.: (1-347) 7157644. [http://en.wikipedia.org/wiki/Herman\\_Branover](http://en.wikipedia.org/wiki/Herman_Branover)

**Gilles BRASSARD** (Computer Science), b. 20.04.1955, elected 27.11.1998. DPTS. *Université de Montreal, Canada*. Tel.: (1-514) 3436807. E-mail: [brassard@iro.umontreal.ca](mailto:brassard@iro.umontreal.ca)  
<http://www.iro.umontreal.ca/~brassard/>

**Alvis BRĀZMA** (Computer Science), b. 26.06.1959, elected 25.11.2010. Grand Medal of the LAS (2013). DPTS. *European Bioinformatics Institute, Cambridge, UK*. Tel.: (440) 1223 494658. E-mail: [brazma@ebi.ac.uk](mailto:brazma@ebi.ac.uk) <http://www.ebi.ac.uk/~brazma>

**Edmunds BUNKŠE** (Human Geography), b. 29.07.1935, elected 26.11.1993. DCBMS. *University of Delaware, USA; University of Latvia*. Tel.: (371) 25427900. E-mail: [ebunkse@udel.edu](mailto:ebunkse@udel.edu) <http://www.udel.edu/geography/faculty/bunkse.html>

**Raimondas ČIEGIS** (Mathematics), b. 18.10.1958, elected 25.11.2004. DPTS. *Vilnius Gediminas Technical University, Lithuania.* Tel.: (370-85) 2744828. E-mail: [raimondas.ciegis@vgtu.lt](mailto:raimondas.ciegis@vgtu.lt) <http://www.mmk.fm.vgtu.lt/en/staff>

**Niels Egede CHRISTENSEN** (Physics), b. 05.04.1943, elected 28.11.2013. DPTS. *University of Aarhus, Denmark.* Tel.: (+45) 8715 5627. E-mail: [nec@phys.au.dk](mailto:nec@phys.au.dk)  
<http://users-phys.au.dk/nec>

**Meinhard CLASSEN** (Medicine), b. 12.08.1936, elected 21.11.1997. DCBMS. *Technical University of Munich, Deutschland.* Tel.: (49-89) 41402257. E-mail: [meinhard.classen@lrz.tum.de](mailto:meinhard.classen@lrz.tum.de)

**Andrew DAUGULIS** (Biotechnology), b. 01.09.1951, elected 09.01.1992. DCBMS. *Queen's University, Canada.* Tel.: (1-613) 5332784. E-mail: [andrew.daugulis@chee.queensu.ca](mailto:andrew.daugulis@chee.queensu.ca)  
[http://chemeng.queensu.ca/people/faculty/Andrew\\_Daugulis/](http://chemeng.queensu.ca/people/faculty/Andrew_Daugulis/)

**Olafs DAUGULIS** (Chemistry), b. 11.09.1968, elected 24.11.2011. DCBMS. *University of Houston, USA.* Tel.: 832-842-8180. E-mail: [olafs@uh.edu](mailto:olafs@uh.edu)

**Pietro Umberto DINI** (Linguistics), b. 05.10.1960, elected 20.11.2003. DHSS. *Dipartimento di Linguistica Università di Pisa, Italy.* Tel.: (39-050) 913701, (39-050) 543593. E-mail: [pud@ling.unipi.it](mailto:pud@ling.unipi.it)

**Dainis DRAVIŅŠ** (Astronomy), b. 10.09.1949, elected 09.01.1992. Grand Medal of the LAS (1998). DPTS. *Lund Observatory, Sweden.* Tel.: (46-46) 2227297. E-mail: [dainis@astro.lu.se](mailto:dainis@astro.lu.se) <http://www.astro.lu.se/~dainis/>

**Juris DREIFELDS** (Political Studies), b. 17.04.1942, elected 26.11.1999. DHSS. *Department of Political Science, Brock University, Canada.* Tel.: (1-905) 6885550, ext. 3478. E-mail: [jdreifelds@cogeco.ca](mailto:jdreifelds@cogeco.ca)

**Jānis DUNDURS** (Mechanics), b. 13.09.1922, elected 06.12.1990. DPTS. *USA.* Tel.: (1-847) 4914008. E-mail: [j- Dundurs@northwestern.edu](mailto:j- Dundurs@northwestern.edu)

**Till von EGIDY** (Physics), b. 23.12.1933, elected 21.11.1997. DPTS. *Technische Universität München, Deutschland.* Tel.: +49(89) 28912510. E-mail: [t.v.egidy@tum.de](mailto:t.v.egidy@tum.de)  
<http://e18.physik.tu-muenchen.de/staff/egidy.html>

**Rolfs EKMANIS** (Literary Criticism), b. 10.02.1929, elected 27.11.1998. DHSS. *USA.* Tel./Fax: (1-928)2049247. E-mail: [rekmanis@gmail.com](mailto:rekmanis@gmail.com)

**Jüri ENGELBRECHT** (Mechanics), b. 01.08.1939, elected 22.11.1996. DPTS. *Estonian Academy of Sciences, Estonia.* Tel.: (372) 6442013. E-mail: [j.engelbrecht@akadeemia.ee](mailto:j.engelbrecht@akadeemia.ee); [je@ioc.ee](mailto:je@ioc.ee) [http://www.akadeemia.ee/en/membership/\\_members/engelbrecht/](http://www.akadeemia.ee/en/membership/_members/engelbrecht/)

**Robert EVARESTOV** (Physics), b. 23.07.1937, elected 20.11.2003. Grand Medal of the LAS (2007). DPTS. *St. Petersburg State University, Russia.* Tel.: (7-812) 4286755. E-mail: [re1973@re1973.spb.edu](mailto:re1973@re1973.spb.edu) <http://quant.chem.spbu.ru/en/user/3>

**Andrievs EZERGAILIS** (History), b. 10.12.1930, elected 05.07.1990. Grand Medal of the LAS (2012). DHSS. *Dept. of History, Ithaca College, USA. Tel.: (1-607) 2743597. E-mail: eze rgail@ithaca.edu*

**Oscar FAIX** (Forestry Science), b. 15.06.1942, elected 25.11.2010. DAFS. *University of Hamburg, Deutschland. Tel.: (049) 407110866. E-mail: o.faix@holz.uni-hamburg.de*

**Trevor FENNELL** (Linguistics), b. 16.07.1940, elected 06.12.1990. Grand Medal of the LAS (2006). DHSS. *Flinders University of South Australia, Australia. Tel.: (618) 82012587. E-mail: Trevor.Fennell@flinders.edu.au; tgfennell@hotmail.com*  
*http://www.flinders.edu.au/ehl/language-studies/research/staff-research-details/trevor-fennell.cfm*

**Tamaz (Thomas V.) GAMKRELIDZE** (Linguistics), b. 23.10.1929, elected 20.11.2008. DHSS. *Georgian National Academy of Sciences, Honorary President (19.06.2013–). Georgia. Tel./Fax: (99532) 998891. E-mail: t.gamkrelidze@science.org.ge*  
*http://en.wikipedia.org/wiki/Tamaz\_V.\_Gamkrelidze*

**Juris HARTMANIS** (Computer Science), b. 05.07.1928, elected 06.12.1990. Grand Medal of the LAS (2001). DPTS. *Cornell University, USA. Tel.: (1-607) 259208. E-mail: jh111@cornell.edu; jh@cs.cornell.edu* *http://www.cs.cornell.edu/people/Hartmanis/*  
*http://www.nationmaster.com/encyclopedia/Juris-Hartmanis*

**Māris HARTMANIS** (Biology), b. 21.09.1953, elected 21.11.1997. DCBMS. *Medivir AB, Sweden. Tel.: 46 8 4076430, 46 70 5628617. E-mail: maris.hartmanis@medivir.com ; maris.hartmanis@biophausia.se*

**Harald zur HAUSEN** (Medicine), b. 11.03.1936, elected 28.11.2013. DCBMS. *Deutsches Krebsforschungszentrum, Heidelberg, Deutschland. Tel.: (0049) 6221420. E-mail: zurhausen@dkfc-Heidelberg.de* *http://en.wikipedia.org/wiki/Harald\_zur\_Hausen*

**Erkki Johannes HOLLO** (Law), b. 28.11.1940, elected 20.11.2003. DHSS. *Faculty of Law, University of Helsinki, Finland. Tel.: (358-09) 19123118. E-mail: erkki.hollo@helsinki.fi*

**Vyacheslav IVANOV** (History of Culture), b. 20.08.1929, elected 26.11.1993. DHSS. *Dept. of Slavic Languages and Literatures, University of California, USA. Tel.: (1-310) 8256397. E-mail: ivanov@ucla.edu* *http://www.slavic.ucla.edu/people/faculty/ivanov/*

**Paul Albert JANMEY** (Physical Chemistry), b. 1953, elected 24.11.2005. DPTS. *University of Pennsylvania, USA. Tel.: (1-215) 5737380. E-mail: janmey@mail.med.upenn.edu*  
*http://www.med.upenn.edu/apps/faculty/index.php/g275/p12968*

**Benediktas JUODKA** (Chemistry), b. 13.01.1943, elected 25.11.1994. DCBMS. *Lietuvos Respublikos Seimas, Lithuania. Tel.: (370-5) 2396649. E-mail: benediktas.juodka@lrs.lt*  
*http://lt.wikipedia.org/wiki/Benediktas\_Juodka*

**Vitauts KALNIŅŠ** (Biology), b. 12.01.1938, elected 24.11.1992. DCBMS. *Canada. Tel.: (1-416) 2257530. E-mail: vitauts.kalnins@bell.net*  
*http://www.biochemistry.utoronto.ca/faculty/emeriti.html*

**Marco KIRM** (Physics), b. 27.12.1965, elected 29.11.2012. DPTS. *University of Tartu, Estonia.* Tel.: (372) 7374601, (372) 53427170. E-mail: [Marco.Kirm@ut.ee](mailto:Marco.Kirm@ut.ee)  
<http://www.ut.ee/en/marco-kirm>

**Jānis KĻAVIŅŠ** (Medicine), b. 06.05.1921, elected 05.07.1990. DCBMS. *Albert Einstein College of Medicine, USA.* Tel.: (1-914) 4722116.

**Georgs Pauls KREIŠMANIS** (Chemistry), b. 28.01.1946, elected 23.11.2000. DCBMS. *University of Latvia.* Tel.: (371) 26171478. E-mail: [jpk@lanet.lv](mailto:jpk@lanet.lv)

**Jānis KRĒSLIŅŠ** (Bibliography), b. 19.09.1924, elected 27.11.1998. DHSS. *USA.* Tel.: (1-718) 5480755. E-mail: [jkreslins@aol.com](mailto:jkreslins@aol.com)

**Arnīs KUKSIS** (Chemistry), b. 03.12.1927, elected 22.11.1996. DCBMS. *University of Toronto, Canada.* Tel.: (1-416) 9782590. E-mail: [arnis.kuksis@utoronto.ca](mailto:arnis.kuksis@utoronto.ca)  
<http://biochemistry.utoronto.ca/kuksis/bch.html>

**Ruta KUNZIŅA** (Medicine), b. 30.07.1916, elected 27.06.1991. DCBMS. *USA.* Tel.: (1-617) 3280611. E-mail: [rbkundsina@aol.com](mailto:rbkundsina@aol.com)

**Gundars ĶENIŅŠ-KINGS** (Economics), b. 19.04.1926, elected 06.12.1990. DHSS. *School of Business, Pacific Lutheran University, USA.* Tel.: (1-253) 5310666, (1-253) 5357302. E-mail: [kingga@plu.edu](mailto:kingga@plu.edu)

**Anto LEIKOLA** (History of Science), b. 08.06.1937, elected 09.01.1992. DHSS. *Temppelkatu 14 A5 Fin00100 Helsinki, Finland.* Tel.: (358) 094543208. E-mail: [anto.leikola@pp.inet.fi](mailto:anto.leikola@pp.inet.fi) <http://www.helsinki.fi/historia/henkilokunta/leikola.html>

**Aleksandr LUSHCHIK** (Physics), b. 22.06.1952, elected 29.11.2012. DPTS. *University of Tartu, Estonia.* Tel.: (372) 7374619, (372) 53304502. E-mail: [luch@fi.tartu.ee](mailto:luch@fi.tartu.ee)  
[http://www.fi.tartu.ee/~luch/alex\\_cv.html](http://www.fi.tartu.ee/~luch/alex_cv.html)

**Ivars MELNGAILIS** (Physics), b. 13.11.1933, elected 27.06.1991. DPTS. *Lincoln Laboratory, Massachusetts Institute of Technology, USA.* Tel.: (1-617) 9817804. E-mail: [melngailis@ll.mit.edu](mailto:melngailis@ll.mit.edu)

**Jānis MELNGAILIS** (Physics), b. 04.02.1939, elected 06.12.1990. DPTS. *University of Maryland, USA.* Tel.: (1-301) 4054916. E-mail: [melng@umd.edu](mailto:melng@umd.edu)  
<http://www.ipr.umd.edu/faculty/melngailis>

**Baiba METUZĀLE-KANGERE** (Linguistics), b. 30.03.1942, elected 24.11.1994. DHSS. *Sweden. Latvia.* Tel.: (371) 67270635, (371) 20027790. E-mail: [baiba.kangere@gmail.com](mailto:baiba.kangere@gmail.com)

**Solveiga MIEŽĪTE** (Psychology), b. 14.05.1937, elected 26.11.1999. DHSS. *Canada.* Tel.: (1-416) 7695784. E-mail: [smiezitis@oise.utoronto.ca](mailto:smiezitis@oise.utoronto.ca); [miezites@lu.lv](mailto:miezites@lu.lv)

**René MOREAU** (Mechanics), b. 27.10.1938, elected 22.11.1996. DPTS. *Institut National Polytechnique de Grenoble, France.* E-mail: [rene.moreau@simap.grenoble-inp.fr](mailto:rene.moreau@simap.grenoble-inp.fr)  
[http://www.academie-sciences.fr/academie/membre/Moreau\\_Rene.htm](http://www.academie-sciences.fr/academie/membre/Moreau_Rene.htm)

**Lalita MUIŽNIECE** (Literary Criticism), b. 11.08.1935, elected 09.01.1992. DHSS. *USA.* Tel.: (1-616) 3454211, (371) 67518174. E-mail: [muizniece@wmich.edu](mailto:muizniece@wmich.edu)

- Ernst NEIZVESTNY** (Art), b. 09.04.1926, elected 21.11.1997. DHSS. *USA*. *Tel.:* (1-212) 2262677. *http://www.enstudio.com/about\_artist/*
- Valters NOLLENDORFS** (Literary Criticism), b. 22.03.1931, elected 05.07.1990. DHSS. *Museum of the Occupation of Latvia (1940–1991)*. *USA*. *Latvia*. *Tel.:* (371) 67212715. *E-mail:* valtersn@lanet.lv *http://www.omf.lv/*
- Erwin OBERLÄNDER** (History), b. 19.03.1937, elected 20.11.2008. DHSS. *Deutschland*. *Tel.:* (0049) 228218483. *E-mail:* oberlandere@gmx.de *http://www.nacionalaidentitate.lv/2010/12/ervins-oberlenders-erwin-oberlander*
- Andreas OKSCHE** (Medicine), b. 27.07.1926, elected 26.11.1993. DCBMS. *Giessen, Deutschland*. *Tel.:* (49-641) 77328. *http://de.wikipedia.org/wiki/Andreas\_Oksche*
- Gottfried OTTING** (Biology, Biophysics), b. 07.09.1958, elected 24.11.2005. DCBMS. *Australian National University, Research School of Chemistry, Australia*. *Tel.:* (61-2) 6125 6507. *E-mail:* Gottfried.Otting@anu.edu.au *http://researchers.anu.edu.au/researchers/otting-gh*
- Jānis Tāivaldis OZOLIŅŠ** (Philosophy), b. 10.09.1950, elected 28.11.2013. DHSS. *School of Philosophy, Australian Catholic University, Australia*. *E-mail:* john.ozolins@acu.edu.au
- Andris PADEGS** (Computer Science), b. 27.03.1929, elected 27.06.1991. Grand Medal of the LAS (2004). DPTS. *USA*. *Tel.:* (1-845) 4623317. *E-mail:* apadegs@optonline.net *http://inventions.lza.lv/izg.php?id=36*
- Radegast PAROLEK** (Literary Criticism), b. 01.12.1920, elected 25.11.1994. DHSS. *Univerzita Karlova, České Republika*. *Tel.:* (420-2) 741426.
- Jānis PENIKIS** (Political Studies), b. 29.07.1933, elected 21.11.1997. DHSS. *USA*. *Tel.:* (1-574) 2877090. *E-mail:* jpenikis@iusb.edu
- Gert von PISTOHLKORS** (History), b. 17.12.1935, elected 05.07.1990. DHSS. *Deutschland*. *Tel.:* (49-551) 541296. *E-mail:* pistohlkors@01019freenet.de *http://de.wikipedia.org/wiki/Gert\_von\_Pistohlkors*
- Andrejs PLAKANS** (History), b. 31.12.1940, elected 05.07.1990. DHSS. *USA*. *Tel.:* (1-515) 2929538. *E-mail:* aplakans@iastate.edu
- Elsa REICHMANIS** (Material Science), b. 09.12.1953, elected 25.11.2004. DCBMS. *Georgia Institute of Technology, School of Chemical and Biomolecular Materials Engineering, USA*. *Tel.:* (1-404) 8942866. *E-mail:* ereichmanis@chbe.gatech.edu *http://www.chemistry.gatech.edu/faculty/Reichmanis/*
- Algirdas SABALIAUSKAS** (Linguistics), b. 26.07.1929, elected 24.11.1992. DHSS. *Institute of the Lithuanian Language, Lithuania*. *Tel.:* (370-5) 2346472. *E-mail:* lki@lki.lt *http://www.lki.lt/*
- Friedrich SCHOLZ** (Literary Criticism), b. 01.03.1928, elected 24.11.1992. DHSS. *Institut für Interdisziplinäre Baltische Studien, Westfälische Wilhelms-Universität, Deutschland*. *Tel./Fax:* (49-251) 8324499.

**Alex SHLUGER** (Physics), b. 28.06.1954, elected 25.11.2010. DPTS. *University College London, UK. Tel.: (44) 2076 791312. E-mail: a.shluger@ucl.ac.uk*  
*http://www.london-nano.com/our-people/academics/alexander-shluger*

**Juris SILENIEKS** (Literary Criticism), b. 29.05.1925, elected 24.11.1992. DHSS. *USA. E-mail: humana@lza.lv*

**Jacques SIMON** (Physics), b. 12.12.1947, elected 22.11.1996. DPTS. *France. Tel.: (33-1) 45926732. E-mail: Jacques.Simon@espci.fr*

**Yurij SOLOVJOV** (History of Science), b. 30.09.1924, elected 10.11.1995. DCBMS. *Russia. Tel.: (7-495) 4383063.*

**Pauls STRADIŅŠ** (Physics), b. 05.02.1963, elected 29.11.2012. DPTS. *National Renewable Energy Laboratory, USA. Tel.: (1-303) 3846774. E-mail: Pauls.Stradins@nrel.gov*  
*http://www.nrel.gov/pv/silicon\_stradins.html*

**Uldis STREIPS** (Biology), b. 01.02.1942, elected 09.01.1992. DCBMS. *University of Louisville, USA. Tel.: (1-502)8525365. E-mail: unstre01@gwise.louisville.edu*  
*https://louisville.edu/medschool/microbiology/faculty/full-time-faculty/uldis-n-streips-ph-d/*

**Juris Pēteris SVENNE** (Physics), b. 14.02.1939, elected 29.11.2001. DPTS. *Dept. of Physics and Astronomy, University of Manitoba, Canada. Tel.: (1-204) 4747354. E-mail: Svenne@physics.umanitoba.ca*  
*http://www.physics.umanitoba.ca/~svenne/resume.html*

**Rasma ŠILDE-KĀRKLĪŅA** (Political Studies), b. 07.06.1946, elected 24.11.1992. DHSS. *LR Saeima, Latvia. USA. Tel.: (371) 67205472. E-mail: Rasma.Karklina@saeima.lv*

**Enn TARVEL** (History), b. 31.07.1932, elected 10.11.1995. DHSS. *Estonia. Tel.: (372) 6726189, (372) 6505280. E-mail: tarvel@hotmail.ee*

**Ralejs TEPFERS** (Mechanics), b. 28.12.1933, elected 25.11.2010. DPTS. *Chalmers University of Technology, Sweden. Tel.: (46-31) 4068921. E-mail: ralejs.tepfers@chalmers.se; ralejs.tepfers@tele2.se*  
*http://www.chalmers.se/cee/EN/divisions/structural-engineering/people/tepfers-ralejs*

**Jana TESAŘOVÁ** (Literary Criticism), b. 16.02.1953, elected 22.11.1996. DHSS. *Institute of World Literature of the Slovak Academy of Sciences, Slovakia. Tel.: (421-2) 54413391, (421-2) 54412701. E-mail: usvltes@savba.sk*

**Felix UNGER** (Medicine), b. 02.03.1946, elected 09.01.1992. DCBMS. *Academia Scientiarum et Artium Europaea, Austria. Tel.: (43-662) 4482335.*  
*E-mail: presidential.office@euro-acad.eu; f.unger@salk.at*  
*http://en.wikipedia.org/wiki/Felix\_Unger*

**Juris UPATNIEKS** (Physics), b. 07.05.1936, elected 27.06.1991. Grand Medal of the LAS (1999). DPTS. *USA. Tel.: (1-734) 6639598. E-mail: juris@upatnieks.com; jupatnks@latnet.lv*  
*http://izgudrojumi.lza.lv/izg\_en.php?id=45*

**Lembit VABA** (Linguistics), b. 27.05.1945, elected 28.11.2013. DHSS. *Estonia. Tel. (372) 6728479. E-mail: phorest45@gmail.com*

**Edvīns VEDĒJS** (Chemistry), b. 31.01.1941, elected 09.01.1992. Grand Medal of the LAS (2005). DCBMS. *University of Michigan, USA*. Tel.: (1-734) 6152177. E-mail: [edved@umich.edu](mailto:edved@umich.edu)

<https://www.chem.lsa.umich.edu/chem/faculty/facultyDetail.php?Uniqname=edved>

**Richard VILLEMS** (Biophysics), b. 28.11.1944, elected 24.11.2005. Grand Medal of the LAS (2011). DCBMS. *Estonian Academy of Sciences; Estonian Biocentre, Estonia*. Tel.: (372) 6442129, (372) 7375064. E-mail: [Richard.Villems@akadeemia.ee](mailto:Richard.Villems@akadeemia.ee); [rvillems@ebc.ee](mailto:rvillems@ebc.ee)  
[http://www.akadeemia.ee/en/membership/\\_members/villems/](http://www.akadeemia.ee/en/membership/_members/villems/)

**Jarl WIKBERG** (Medicine and Pharmacology), b. 04.11.1949, elected 23.11.2000. DCBMS. *Uppsala University, Sweden*. Tel.: (46-18) 4714238, mob. 46-703449549. E-mail: [Jarl.Wikberg@farmbio.uu.se](mailto:Jarl.Wikberg@farmbio.uu.se)

<http://www.zoominfo.com/#!/search/profile/person?personId=74278806&targetid=profile>

**Eberhard WINKLER** (History), b. 31.07.1955, elected 24.11.2011. DHSS. *Georg-August Universität Göttingen, Deutschland*. Tel.: (491) 1755910377. E-mail: [ewinkle@gwdg.de](mailto:ewinkle@gwdg.de)  
<http://www.uni-goettingen.de/de/107985.html>

**Kurt WÜTHRICH** (Biophysics), b. 04.10.1938, elected 25.11.2004. DCBMS. *Institute of Molecular Biology and Biophysics, Switzerland*. Tel.: (41-44) 6332473 E-mail: [kurt.wutrich@mol.biol.ethz.ch](mailto:kurt.wutrich@mol.biol.ethz.ch)

[http://www.mol.biol.ethz.ch/groups/wuthrich\\_group/wu\\_people/wkurt/cv](http://www.mol.biol.ethz.ch/groups/wuthrich_group/wu_people/wkurt/cv)

**Bertrams ZARIŅŠ** (Medicine), b. 22.06.1942, elected 27.06.1991. DCBMS. *Massachusetts General Hospital, USA*. Tel.: (1-617) 7263421. E-mail: [bzarins@partners.org](mailto:bzarins@partners.org)  
[http://orthodoc.aaos.org/zarins/Zarins\\_CV\\_070406.pdf](http://orthodoc.aaos.org/zarins/Zarins_CV_070406.pdf)

**Kristaps ZARIŅŠ** (Medicine), b. 02.12.1943, elected 06.12.1990. Grand Medal of the LAS (2009). DCBMS. *Stanford University School of Medicine, USA*. Tel.: (1-650) 7255227. E-mail: [marialm@stanford.edu](mailto:marialm@stanford.edu); [zarins@stanford.edu](mailto:zarins@stanford.edu)  
[http://med.stanford.edu/profiles/Christopher\\_Zarins/](http://med.stanford.edu/profiles/Christopher_Zarins/)

**Arvīds ZIEDONIS** (Philosophy), b. 08.03.1931, elected 10.11.1995. DHSS. *USA*. Tel.: (1-570) 6296349. E-mail: [ziedonis@ptd.net](mailto:ziedonis@ptd.net)  
<http://www.worldcat.org/identities/lccn-n50-14055>

**Zigmas ZINKEVIČIUS** (Linguistics), b. 04.01.1925, elected 10.11.1995. DHSS. *Institute of Lithuanian Language, Lithuania*. Tel.: (370-5) 2410877, (370-5) 2346472. E-mail: [lki@lki.lt](mailto:lki@lki.lt) <http://www.lki.lt/>

**Regina ŽUKA** (Chemistry), b. 06.12.1936, elected 23.11.2000. Grand Medal of the LAS (2014). DCBMS. *Rimonyx Pharmaceuticals, Ltd., Israel*. Tel.: (972-8) 9389505. E-mail: [reginazhuka@gmail.com](mailto:reginazhuka@gmail.com) <http://www.lza.lv/scientists/Zhuk.htm>



## CORRESPONDING MEMBERS

**Edgars ĀBELE** (Chemistry), b. 22.01.1962, elected 25.11.2010. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014943. E-mail: [abele@osi.lv](mailto:abele@osi.lv)  
<http://www.lza.lv/scientists/abeleE.htm>

**Māris ĀBELE** (Astronomy), b. 27.04.1937, elected 29.11.2001. DPTS. *Institute of Astronomy, University of Latvia*. Tel.: (371) 67034589, (371) 26419372. E-mail: [maris.abele@lu.lv](mailto:maris.abele@lu.lv)  
<http://www.lza.lv/scientists/AbeleM.htm>

**Igors AKSIKS** (Medicine), b. 16.09.1959, elected 07.12.2006. DCBMS. *University of Latvia*. Tel.: (371) 67069730, (371) 29238422. E-mail: [igors.axix@stradini.lv](mailto:igors.axix@stradini.lv);  
[neirokirurgija@stradini.lv](mailto:neirokirurgija@stradini.lv) <http://www.lza.lv/scientists/aksiksi.htm>

**Agnis ANDŽĀNS** (Mathematics), b. 19.08.1952, elected 24.11.2005. DPTS. *University of Latvia*. Tel.: (371) 67033738. E-mail: [agnis.andzans@lu.lv](mailto:agnis.andzans@lu.lv)  
<http://www.lza.lv/scientists/andzans.htm>

**Ilga APINE** (History), b. 13.03.1928, elected 16.03.1978. DHSS. *Institute of Philosophy and Sociology, University of Latvia*. Tel.: (371) 28385810. E-mail: [vallija@lza.lv](mailto:vallija@lza.lv)  
<http://www.fsi.lu.lv>

**Jānis AUZIŅŠ** (Mechanics), b. 25.07.1950, elected 20.11.2008. DPTS. *Rīga Technical University*. Tel.: (371) 67089396. E-mail: [auzinsjp@latnet.lv](mailto:auzinsjp@latnet.lv) <http://www.mmd.rtu.lv/auzinsja.htm>

**Ringolds BALODIS** (Law), b. 09.01.1966, elected 24.11.2011. DHSS. *University of Latvia*. Tel.: (371) 67034447. E-mail: [Ringolds.Balodis@jpd.gov.lv](mailto:Ringolds.Balodis@jpd.gov.lv); [Ringolds.Balodis@lu.lv](mailto:Ringolds.Balodis@lu.lv)  
[http://lv.wikipedia.org/wiki/Ringolds\\_Balodis](http://lv.wikipedia.org/wiki/Ringolds_Balodis)

**Guntis BĀRZDIŅŠ** (Computer Science), b. 23.12.1962, elected 25.11.2010. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 29206943. E-mail: [guntis.barzdins@lumii.lv](mailto:guntis.barzdins@lumii.lv) <http://www.lza.lv/scientists/barzdinsg.htm>

**Edgars BERVALDS** (Astronomy), b. 13.09.1936, elected 23.11.2000. DPTS. *Latvian Academy of Sciences*. Tel.: (371) 67226944, (371) 26371390. E-mail: [berv@latnet.lv](mailto:berv@latnet.lv)  
<http://www.lza.lv/scientists/bervalds.htm>

**Imants BĒRSONS** (Physics), b. 11.12.1935, elected 24.11.1992. DPTS. *University of Latvia*. Tel.: (371) 67229747. E-mail: [bersons@latnet.lv](mailto:bersons@latnet.lv) <http://www.lza.lv/scientists/bersonsi.htm>

**Edīte BIRĢELE** (Agricultural Sciences), b. 14.08.1937, elected 26.11.1999. DCBMS; DAFS. *Latvia University of Agriculture*. Tel.: (371) 63027664. E-mail: [edite.birgele@llu.lv](mailto:edite.birgele@llu.lv)  
<http://www.lza.lv/scientists/Birgele.htm>

**Juris BORZOVS** (Computer Science), b. 17.04.1950, elected 22.11.2007. DPTS. *University of Latvia*. Tel.: (371) 67034490, (371) 29257530. Skype: [jborzovs](https://www.skype.com/user/jborzovs). E-mail: [juris.borzovs@lu.lv](mailto:juris.borzovs@lu.lv)  
<http://www.lza.lv/scientists/borzovs.htm>

**Maija BURIMA** (Literary Criticism), b. 10.03.1971, elected 29.11.2012. DHSS. *Daugavpils University*. Tel.: (371) 65424238, (371) 29789096. E-mail: [majja.burima@du.lv](mailto:majja.burima@du.lv)

- Brigita BUŠMANE** (Linguistics), b. 04.09.1939, elected 23.11.2000. DHSS. *Institute of Latvian Language, University of Latvia*. Tel.: (371) 67229007. Tel./Fax: (371) 67227696. E-mail: brigita.busmane@inbox.lv <http://www.lza.lv/scientists/busmane.htm>
- Ausma CIMDIŅA** (Literary Criticism), b. 30.09.1950, elected 20.11.2003. DHSS. *University of Latvia*. Tel.: (371) 67033850. E-mail: ausma.cimdina@lu.lv <http://www.lza.lv/scientists/cimdina.htm>
- Inga CIPROVIČA** (Agricultural Sciences), b. 03.08.1969, elected 24.11.2011. DAFS. *Latvia University of Agriculture*. Tel.: (371) 63921075, 63005729. E-mail: inga.ciprovisa@llu.lv <http://www.lza.lv/scientists/Ciprovisa.htm>
- Andris ČATE** (Mechanics), b. 05.07.1952, elected 25.11.2004. DPTS. *Rīga Technical University*. Tel.: (371) 67089124. E-mail: and\_cate@latnet.lv <http://www.lza.lv/scientists/chatea.htm>
- Kārlis ČERĀNS** (Computer Science), b. 21.12.1965, elected 28.11.2013. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 67213716, E-mail: karlis.cerans@lumii.lv <http://www.ltm.lv/~karlisc/>
- Konstantīns DIDENKO** (Economics), b. 23.08.1946, elected 24.11.2005. DHSS. *Rīga Technical University*. Tel.: (371) 67089397. E-mail: konstantins.didenko@rtu.lv <http://www.lza.lv/scientists/Didenko.htm>
- Tatjana DIŽBITE** (Forestry Science), b. 12.01.1949, elected 22.11.2007. DAFS. *Latvian State Institute of Wood Chemistry*. Tel.: (371) 67555916. E-mail: lcl@edi.lv <http://www.lza.lv/scientists/dizbite.htm>
- Ina DRUVIETE** (Linguistics), b. 29.05.1958, elected 26.11.1999. DHSS. *Ministry of Education and Science*. Tel.: (371) 67047810, (371) 26352167. E-mail: ina.druviete@izm.gov.lv <http://www.lza.lv/scientists/Druviete.htm>
- Guntis EBERHARDS** (Geography), b. 08.02.1936, elected 09.01.1992. DCBMS. *University of Latvia*. Tel.: (371) 29437990. E-mail: guntise@navigator.lv
- Pārsla EGLĪTE** (Demography), b. 22.12.1934, elected 27.11.1998. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 26577103. E-mail: parsla.eglite@inbox.lv
- Andrejs ĒRGLIS** (Medicine), b. 25.12.1964, elected 20.11.2008. DCBMS. *Institute of Cardiology, University of Latvia*. Tel.: (371) 67069575. E-mail: a.a.erglis@stradini.lv <http://www.lza.lv/scientists/ErglisA.htm>
- Donāts ERTS** (Physics), b. 22.11.1954, elected 24.11.2011. DPTS. *Institute of Chemical Physics, University of Latvia*. Tel.: (371) 67033875, (371) 26313360. E-mail: Donats.Erts@lu.lv <http://home.lu.lv/~donats/>
- Andris FERDATS** (Medicine), b. 11.06.1941, elected 09.01.1992. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 29495937. E-mail: fandris11@inbox.lv
- Fjodors FJODOROVŠ** (Literary Criticism), b. 28.09.1939, elected 10.11.1995. DHSS. *Daugavpils University, Latvia*. Tel.: (371) 65424238, (371) 29195869. E-mail: ki@du.lv, fedor.fedorov@gmail.com <http://www.lza.lv/scientists/fjodorov.htm>

**Zinta GAILE** (Agricultural Sciences), b. 07.02.1958, elected 20.11.2008. DAFS. *Latvia University of Agriculture*. Tel.: (371) 63005679, (371) 29135525. E-mail: zinta.gaile@llu.lv <http://www2.llu.lv/homepg/lf/abti/gaile.htm>

**Tālis GAITNIEKS** (Forestry), b. 08.09.1957, elected 26.11.2009. DAFS. *Latvian State Forestry Research Institute "Silava"*. Tel.: (371) 26463738. E-mail: talis.gainieks@silava.lv <http://www.silava.lv/65/section.aspx/View/82>

**Jānis GRABIS** (Computer Science), b. 22.10.1974, elected 29.11.2012. DPTS. *Rīga Technical University*. Tel.: (371) 67089594. E-mail: grabis@iti.rtu.lv <http://iti.rtu.lv/vitk/lv/darbinieki/grabis-janis>

**Jānis GRĀVĪTIS** (Material Science), b. 16.03.1952, elected 07.12.2006. DCBMS. *Latvian State Institute of Wood Chemistry*. Tel.: (371) 67553137. E-mail: jgravit@edi.lv <http://www.lza.lv/scientists/gravitisj.htm>

**Modris GREITĀNS** (Computer Science), b.29.12.1964, elected 24.11.2011. DPTS. *Institute of Electronics and Computer Science*. Tel.: (371) 67558155. E-mail: modris\_greitans@edi.lv; modris@edi.lv <http://www.lza.lv/scientists/greitans.htm>

**Māra GRUDULE** (Literary Criticism), b. 01.03.1963, elected 25.11.2010. DHSS. *University of Latvia*. Tel.: (371) 67752853, (371) 26520095. E-mail: mara.grudule@latnet.lv, maragru@latnet.lv

**Jānis IKSTENS** (Politicalology), b. 05.01.1970, elected 28.11.2013. DHSS. *University of Latvia*. Tel.: (371) 27331144. E-mail: janis.ikstens@lu.lv

**Aigars JIRGENSONS** (Chemistry), b. 14.09.1973, elected 28.11.2013. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 29334948. E-mail: aigars@osi.lv <http://osmg.osi.lv/aigars-jirgensons>

**Jevgeņijs JOLĪNS** (Physics), b. 04.09.1937, elected 26.11.1993. DPTS. *USA*. Tel.: (1-215) 6733252. E-mail: eiolin@netzero.com <http://www.lza.lv/scientists/iolin.htm>

**Tālis JUHNA** (Environmental Sciences), b. 22.01.1972, elected 24.11.2011. DCBMS. *Rīga Technical University*. Tel.: (371) 29226441. E-mail: talis.juhna@rtu.lv <https://ortus.rtu.lv/science/lv/experts/1554>

**Māra JURE** (Chemistry), b. 13.09.1961, elected 24.11.2005. DCBMS. *Rīga Technical University*. Tel.: (371) 67089220. E-mail: mara@kf.rtu.lv <http://www.lza.lv/scientists/JureM.htm>

**Igors KABAŠKINS** (Computer Science), b. 06.08.1954, elected 27.11.1998. DPTS. *Transport and Telecommunication Institute*. Tel.: (371) 67100594. E-mail: kiv@tsi.lv <http://www.lza.lv/scientists/kabashkin.htm>

**Uldis KALNENIEKS** (Biology), b. 28.04.1957, elected 22.11.2007. DCBMS. *Institute of Microbiology and Biotechnology, University of Latvia*. Tel.: (371) 67034887. E-mail: kalnen@lanet.lv <http://www.lza.lv/scientists/kalneniek.htm>

**Audris KALNIŅŠ** (Computer Science), b. 14.08.1942, elected 26.11.1999. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 67211014. E-mail: audris@mii.lu.lv <http://www.lza.lv/scientists/KalninsAu.htm>

- Daina KĀRKLĪŅA** (Agricultural Sciences), b. 12.07.1950, elected 07.12.2006. DAFS. *Latvia University of Agriculture. Tel.: (371) 63005690. E-mail: Daina.Karklina@llu.lv*  
<http://www.lza.lv/scientists/karklinad.htm>
- Vladimirs KASJANOVŠ** (Mechanics), b. 10.09.1946, elected 24.11.2005. DPTS. *Rīga Stradiņš University, Rīga Technical University. Tel.: (371) 67089126. E-mail: kasyanov@latnet.lv*  
<http://www.lza.lv/scientists/kasjanovs.htm>
- Vjačeslavs KAŠČEJEVS** (Physics), b. 16.03.1978, elected 28.11.2013. DPTS. *University of Latvia. Tel.: (371) 67033742. E-mail: slava@latnet.lv*  
<http://www.lcfi.lu.lv/teor/kash.html>
- Valerjans KAUSS** (Chemistry), b. 28.08.1954, elected 22.11.2007. DCBMS. *Latvian Institute of Organic Synthesis. Tel.: (371) 67014815. E-mail: valerjan@osi.lv*  
<http://www.lza.lv/scientists/kauss.htm>
- Imants KIRTOVSKIS** (Economics), b. 24.01.1930, elected 12.02.1987. DHSS. *Latvian Academy of Sciences. Tel.: (371) 67320892*
- Valdis KOKARS** (Chemistry), b. 10.09.1951, elected 26.11.2009. DCBMS. *Rīga Technical University. Tel.: (371) 26579172. E-mail: vkokars@ktf.rtu.lv*  
<http://www.lza.lv/scientists/KokarsV.htm>
- Tatjana KOĶE** (Pedagogics), b. 09.03.1955, elected 23.11.2000. DHSS. *Rīga Stradiņš University. Tel.: (371) 67061558. E-mail: Tatjana.Koke@rsu.lv*  
<http://www.lza.lv/scientists/KokeT.htm>
- Tatjana KOZLOVSKA** (Biology), b. 12.08.1955, elected 20.11.2003. DCBMS. *Latvian Biomedical Research and Study Centre. Tel.: (371) 67808211. E-mail: tatyana@biomed.lu.lv*  
<http://www.lza.lv/scientists/kozlovskaT.htm>
- Andrejs KRASŅIKOVŠ** (Mechanics), b. 27.07.1956, elected 24.11.2011. DPTS. *Rīga Technical University. Tel.: (371) 67089159, (371) 67089473, (371) 29436518. E-mail: akrasn@latnet.lv* [http://www.lzp.gov.lv/images/stories/EK\\_velesanas/2EK\\_I/Krasnikovs\\_I.doc](http://www.lzp.gov.lv/images/stories/EK_velesanas/2EK_I/Krasnikovs_I.doc)
- Aivars KRAUZE** (Chemistry), b. 16.03.1952, elected 07.12.2006. DCBMS. *Latvian Institute of Organic Synthesis. Tel.: (371) 67014870. E-mail: krauze@osi.lv*  
<http://www.lza.lv/scientists/krauzea.htm>
- Andris KRĒSLIŅŠ** (Power Engineering), b. 25.03.1938, elected 24.11.1992. DPTS. *Rīga Technical University. Tel.: (371) 29284950. E-mail: kreslins@bf.rtu.lv*  
<http://www.lza.lv/scientists/KreslinsA.htm>
- Dainis KRIEVIŅŠ** (Medicine), b. 28.06.1967, elected 24.11.2011. DCBMS. *P. Stradiņš Clinical University Hospital, University of Latvia. Tel.: (371) 67069604. E-mail: dainis.krievins@stradini.lv; dainiskk@yahoo.com*  
<http://www.lu.lv/par/kontaktinformacija/meklesana/persona/204187/>
- Jānis KRISTAPSONŠ** (Science of Science (Informatics)), b. 23.06.1939, elected 10.11.1995. DPTS. *Latvian Academy of Sciences. Tel.: (371) 67223567. E-mail: jtk@lza.lv*  
<http://www.lza.lv/scientists/Kristapsons.htm>

- Zaiga KRĪŠJĀNE** (Geography), b. 12.12.1963, elected 25.11.2010. DCBMS. *University of Latvia*. Tel.: (371) 67336373, (371) 29153746. E-mail: zaiga.krisjane@lu.lv  
<http://www.lu.lv/par/kontaktinformacija/meklesana/persona/32510>
- Aleksejs KUZMINS** (Physics), b. 12.08.1968, elected 24.11.2005. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67251691. E-mail: a.kuzmin@cfi.lu.lv  
<http://www.lza.lv/scientists/kuzmina.htm>
- Benita LAUMANE** (Linguistics), b. 03.06.1937, elected 10.11.1995. DHSS. *Liepāja University, Latvia*. Tel.: (371) 63454183, (371) 26077061. E-mail: khi@liepu.lv
- Mārcis LEJA** (Medicine), b. 26.05.1957, elected 29.11.2012. DCBMS. *University of Latvia*. Tel.: (371) 29497500, (371) 67040367. E-mail: marcis.leja@aslimnica.lv; cei@latnet.lv  
<http://www.lza.lv/scientists/LejaM.htm>
- Sandra LEJNIECE** (Medicine), b. 26.11.1963, elected 28.11.2013. DCBMS. *Rīga Stradiņš University*. Tel.: (371) 29203397. E-mail: lejniece@latnet.lv
- Aivars LEJNIEKS** (Medicine), b. 26.05.1957, elected 25.11.2010. DCBMS. *Rīga Stradiņš University*. Tel.: (371) 29554397. E-mail: lejnieks@latnet.lv  
<http://www.lza.lv/scientists/LejnieksA.htm>
- Imants LIEPA** (Biology), b. 12.02.1937, elected 21.11.1997. DCBMS, DAFS. *Latvia University of Agriculture*. Tel.: (371) 63026322. E-mail: Imants.Liepa@llu.lv  
<http://www.lza.lv/scientists/liepai.htm>
- Aija LINĒ** (Biology), b. 19.11.1973, elected 26.11.2009. DCBMS. *Latvian Biomedical Research and Study Centre*. Tel.: (371) 67808208. E-mail: aija@biomed.lu.lv  
<http://www.lza.lv/scientists/LineA.htm>
- Iļze Biruta LOZE** (Archaeology), b. 03.03.1936, elected 21.11.1997. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 26822972. E-mail: neoilze@lza.lv
- Ervins LUKŠEVIČS** (Geology), b. 19.11.1955, elected 20.11.2008. DCBMS. *University of Latvia*. Tel.: (371) 67333071. E-mail: ervins.luksevics@lu.lv  
<http://www.lza.lv/scientists/Luksevics.htm>
- Roberts MAKSIMOVŠ** (Mechanics), b. 02.07.1938, elected 12.02.1987. DPTS. *Institute of Polymer Mechanics, University of Latvia*. Tel.: (371) 67543122. E-mail: maksimov@edi.lv  
<http://www.lza.lv/scientists/maksimov.htm>
- Ārija MEIKALIŠA** (Law), b. 25.05.1952, elected 07.12.2006. DHSS. *University of Latvia*. Tel.: (371) 20046013. E-mail: arija.meikalisa@lu.lv
- Viesturs MELECIS** (Biology), b. 10.11.1950, elected 25.11.2004. DCBMS. *Institute of Biology, University of Latvia*. Tel.: (371) 67944988. E-mail: vmelecis@email.lubi.edu.lv  
<http://www.lza.lv/scientists/Melecis.htm>
- Aija MELLUMA** (Ecology), b. 13.10.1935, elected 06.12.1990. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 67451514. E-mail: aimella@inbox.lv
- Jurijs MERKURJEVS** (Computer Science), b. 30.04.1954, elected 25.11.2004. DPTS. *Rīga Technical University*. Tel.: (371) 67089514. E-mail: merkur@itl.rtu.lv  
<http://www.itl.rtu.lv/mik/ymerk.html>

**Alfrēds MILTIŅŠ** (Medicine), b. 06.12.1939, elected 21.11.1997. DCBMS. *University of Latvia*. Tel.: (371) 29507004. E-mail: [inara.ancupane@bkus.lv](mailto:inara.ancupane@bkus.lv)

**Valdis MUKTUPĀVELS** (Folklore Studies), b. 24.11.2011. DHSS. *University of Latvia*. Tel.: (371) 67033848, (371) 29147903. E-mail: [valdis.muktupavels@lu.lv](mailto:valdis.muktupavels@lu.lv); [mukti@latnet.lv](mailto:mukti@latnet.lv)  
<http://www.makslinieki.lv/profile/474/>  
<http://www.lu.lv/par/kontaktinformacija/meklesana/persona/32048>

**Oļģerts NIKODEMUS** (Geography), b. 29.09.1954, elected 24.11.2005. DCBMS. *University of Latvia*. Tel.: (371) 67334021. E-mail: [olgerts.nikodemus@lu.lv](mailto:olgerts.nikodemus@lu.lv); [nikodemu@lanet.lv](mailto:nikodemu@lanet.lv)  
<http://www.lza.lv/scientists/Nikodemus.htm>

**Daina NĪTIŅA** (Linguistics), b. 05.04.1942, elected 06.12.1990. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 29410399. E-mail: [daija@apollo.lv](mailto:daija@apollo.lv)  
<http://www.lza.lv/scientists/nitina.htm>

**Leonīds NOVICKIS** (Computer Science), b. 11.12.1950, elected 07.12.2006. DPTS. *Rīga Technical University*. Tel.: (371) 67089575, (371) 67089572, (371) 29514066. E-mail: [lnovickis@gmail.com](mailto:lnovickis@gmail.com) [http://www.cs.rtu.lv/ASTF/LDPPG/personals\\_eng.htm](http://www.cs.rtu.lv/ASTF/LDPPG/personals_eng.htm)

**Uldis OSIS** (Economics), b. 10.04.1948, elected 25.11.2004. DHSS. *Konsorts, Ltd.* Tel.: (371) 67216793. E-mail: [uldis.osis@gmail.com](mailto:uldis.osis@gmail.com) <http://www.lza.lv/scientists/osisu.htm>

**Artis PABRIKS** (Political Studies), b. 22.03.1966, elected 25.11.2004. DHSS. *LR Saeima*. E-mail: [Artis.Pabriks@saeima.lv](mailto:Artis.Pabriks@saeima.lv) [http://lv.wikipedia.org/wiki/Artis\\_Pabriks](http://lv.wikipedia.org/wiki/Artis_Pabriks)

**Māra PILMANE** (Medicine), b. 22.05.1962, elected 21.11.1997. DCBMS. *Rīga Stradiņš University*. Tel.: (371) 67326526. E-mail: [pilmane@latnet.lv](mailto:pilmane@latnet.lv)  
<http://www.lza.lv/scientists/pilmane.htm>

**Irina PILVERE** (Economics), b. 03.03.1956, elected 25.11.2010. DAFS. *Latvia University of Agriculture*. Tel.: (371) 63023739. E-mail: [irina.pilvere@llu.lv](mailto:irina.pilvere@llu.lv)

**Valdis PĪRĀGS** (Medicine), b. 20.02.1961, elected 26.11.2009. DCBMS. *University of Latvia*. Tel.: (371) 67069307, (371) 29237760. E-mail: [pirags@latnet.lv](mailto:pirags@latnet.lv)  
<http://www.lza.lv/scientists/pirags.htm>

**Andris PLOTNIEKS** (Law), b. 19.06.1938, elected 06.12.1990. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 29217143.

**Remigijs POČS** (Economics), b. 08.09.1947, elected 20.11.2003. DHSS. *Rīga Technical University*. Tel.: (371) 67089010. E-mail: [remigijs.pocs@rtu.lv](mailto:remigijs.pocs@rtu.lv)  
<http://www.lza.lv/scientists/PocsR.htm>

**Osvalds PUGOVIČS** (Chemistry), b. 16.07.1963, elected 29.11.2012. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67551207. E-mail: [osvalds@osi.lv](mailto:osvalds@osi.lv)

**Silvija RADZOBĒ** (Art Studies), b. 29.04.1950, elected 25.11.2004. DHSS. *University of Latvia*. Tel.: (371) 29408617. E-mail: [radzobe@latnet.lv](mailto:radzobe@latnet.lv)

**Aleksandrs RAPOPORTS** (Biology), b. 13.10.1946, elected 26.11.1993. DCBMS. *Institute of Microbiology and Biotechnology, University of Latvia*. Tel.: (371) 67034891. E-mail: [rapoport@mail.eunet.lv](mailto:rapoport@mail.eunet.lv) <http://www.lza.lv/scientists/rapoport.htm>

- Andrejs REINFELDS** (Mathematics), b. 02.06.1942, elected 26.11.1999. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 29144961. E-mail: reinf@latnet.lv <http://www.lza.lv/scientists/reinfelds.htm>
- Andris RUBENIS** (Philosophy), b. 08.04.1951, elected 20.11.2003. DHSS. *Art Academy of Latvia*. Tel.: (371) 26541215. E-mail: ruben@latnet.lv
- Jānis RUDZĪTIS** (Mechanics), b. 18.10.1938, elected 21.11.1997. DPTS. *Rīga Technical University*. Tel.: (371) 67089701. E-mail: arai@latnet.lv <http://www.lza.lv/scientists/rudzititsj.htm>
- Maija RUKLIŠA** (Biology), b. 01.05.1943, elected 20.11.2003. DCBMS. *Institute of Microbiology and Biotechnology, University of Latvia*. Tel.: (371) 67423097. E-mail: coryne@inbox.lv <http://www.lza.lv/scientists/ruklisha.htm>
- Ingrīda RUMBA-ROZENFELDE** (Medicine), b. 16.09.1959, elected 24.11.2005. DCBMS. *University of Latvia*. Tel.: (371) 67034377. E-mail: ingrida.rumba@lu.lv <http://www.lza.lv/scientists/rumbai.htm>
- Dainis Edgars RUŅĪS** (Forestry), b. 26.06.1972., elected 28.11.2013. DAFS. *Latvian State Forestry Research Institute "Silava"*. Tel.: (371) 67949945. E-mail: dainis.rungis@silava.lv <http://www.lza.lv/scientists/RungisDE.htm>
- Mārtiņš RUTKIS** (Physics), b. 8.08.1957, elected 24.11.2011. DPTS. *Institute of Solid State Physics University of Latvia*. Tel.: (371) 67260787. E-mail: martins.rutkis@cfi.lu.lv [http://www.lzp.gov.lv/images/stories/EK\\_velesanas/1EK\\_I/Rutkis\\_I.doc](http://www.lzp.gov.lv/images/stories/EK_velesanas/1EK_I/Rutkis_I.doc)
- Feliksš SADIRBAJEVS** (Mathematics), b. 20.11.1951, elected 20.11.2008. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 67229213. E-mail: felix@latnet.lv [http://www.lumii.lv/Pages/MII\\_staff/sadirbajev.htm](http://www.lumii.lv/Pages/MII_staff/sadirbajev.htm)
- Narimants SALENIEKS** (Mechanics), b. 13.02.1938, elected 25.11.1994. DPTS. *Rīga Technical University*. Tel.: (371) 67536160, (371) 29263587. E-mail: narimants@gmail.com <http://www.lza.lv/scientists/salienieks.htm>
- Antans-Sauļus SAUHATS** (Power Engineering), b. 14.03.1948, elected 20.11.2003. DPTS. *Rīga Technical University*. Tel.: (371) 67089930. E-mail: sauhatas@eef.rtu.lv <http://www.lza.lv/scientists/sauhats.htm>
- Daliņa SEGLIŅA** (Agricultural Sciences), b. 01.08.1961, elected 29.11.2012. DAFS. *Latvian State Institute of Fruit-Growing*. Tel.: (371) 63722294, (371) 26482677. E-mail: daliņa.seglina@lvai.lv [http://www.lvai.lv/Darbinieki/Daliņa\\_Seglina.html](http://www.lvai.lv/Darbinieki/Daliņa_Seglina.html)
- Andrejs SKAĢERS** (Medicine), b. 03.08.1940, elected 26.11.1999. DCBMS. *Rīga Stradiņš University*. Tel./Fax: (371) 67455523. E-mail: andrejs.skagers@rsu.lv <http://www.lza.lv/scientists/Skagers.htm>
- Ilze SKRABULE** (Agricultural Sciences), b. 22.03.1959, elected 28.11.2013. DAFS. *State Priekuli Plant Breeding Institute*. Tel.: (371) 64130162, (371) 26365268. E-mail: Ilze.Skrabule@priekulislekcija.lv <http://www.lza.lv/scientists/Skrabule.htm>



- Juris SKUJĀNS** (Engineering Sciences), b. 08.09.1952, elected 20.11.2008. DAFS. *Latvia University of Agriculture*. Tel.: (371) 63022584. E-mail: [juris.skujans@llu.lv](mailto:juris.skujans@llu.lv)  
<http://www.llu.lv/getfile.php?id=58360>
- Gunta SPRINĢE** (Biology), b. 29.01.1955, elected 24.11.2011. DCBMS. *Institute of Biology, University of Latvia*. Tel.: (371) 677945412, (371) 67704022, (371) 29403305. E-mail: [gunta.springe@lu.lv](mailto:gunta.springe@lu.lv); [gspringe@email.lubi.edu.lv](mailto:gspringe@email.lubi.edu.lv)  
<http://www.lu.lv/par/kontaktinformacija/meklesana/persona/185893/>
- Anna STAFECKA** (Linguistics), b. 15.12.1953, elected 20.11.2008. DHSS. *Institute of Latvian Language, University of Latvia*. Tel.: (371) 67226345, (371) 28604876. E-mail: [anna.stafecka@inbox.lv](mailto:anna.stafecka@inbox.lv)
- Uldis SUKOVSKIS** (Computer Science), b. 08.07.1952, elected 20.11.2008. DPTS. *Rīga Technical University*. Tel.: (371) 67089303. E-mail: [uldis.sukovskis@rtu.lv](mailto:uldis.sukovskis@rtu.lv)
- Edgars SŪNA** (Chemistry), b. 07.06.1970, elected 20.11.2008. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014895. E-mail: [edgars@osi.lv](mailto:edgars@osi.lv)  
<http://www.lza.lv/scientists/sunae.htm>
- Aleksandrs ŠOSTAKS** (Mathematics), b. 05.12.1948, elected 25.11.2004. DPTS. *University of Latvia*. Tel.: (371) 67033725. E-mail: [sostaks@latnet.lv](mailto:sostaks@latnet.lv); [sostaks@lanet.lv](mailto:sostaks@lanet.lv)  
<http://www.lza.lv/scientists/Shostaks.htm>
- Inna ŠTEINBUKA** (Economics), b. 08.10.1952, elected 27.11.1998. DHSS. *European Commission Representation in Latvia*. Tel.: (371) 67085400. E-mail: [inna.steinbuka@ec.europa.eu](mailto:inna.steinbuka@ec.europa.eu) <http://www.lza.lv/scientists/Steinbuka.htm>
- Igors ŠUVAJEVS** (Philosophy), b. 07.04.1963, elected 23.11.2000. DHSS. *University of Latvia*. Tel.: (371) 26734581. E-mail: [igors.suvajevs@lu.lv](mailto:igors.suvajevs@lu.lv)  
<http://www.lza.lv/scientists/SuvajevsI.htm>
- Aivars TABUNS** (Sociology), b. 22.03.1953, elected 29.11.2001. DHSS. *University of Latvia*. Tel.: (371) 67140040. E-mail: [aivars.tabuns@lu.lv](mailto:aivars.tabuns@lu.lv)  
<http://www.lza.lv/scientists/tabuns.htm>
- Kaspars TĀRS** (Biology), b. 25.10.1971, elected 25.11.2010. DCBMS. *Latvian Biomedical Research and Study Centre*. Tel.: (371) 67808200, (371) 27076237. E-mail: [kaspars@biomed.lu.lv](mailto:kaspars@biomed.lu.lv) <http://www.lza.lv/scientists/TarsK.htm>
- Tālis TISENKOPFS** (Sociology), b. 28.07.1957, elected 27.11.1998. DHSS. *University of Latvia*. Tel./Fax: (371) 67140040. E-mail: [talis.tisenkopfs@lu.lv](mailto:talis.tisenkopfs@lu.lv)  
<http://www.lza.lv/scientists/tisenkopfs.htm>
- Pēteris TRAPENCIERIS** (Chemistry), b. 14.03.1952, elected 25.11.2004. DCBMS. *Latvian Institute of Organic Synthesis*. Tel.: (371) 67014936. E-mail: [peteris@osi.lv](mailto:peteris@osi.lv)  
<http://www.lza.lv/scientists/trapencieris.htm>
- Māris TURKS** (Chemistry), b. 11.03.1976, elected 24.11.2011. DCBMS. *Rīga Technical University*. Tel.: (371) 67089251, (371) 26001234. E-mail: [maris\\_turks@ktf.rtu.lv](mailto:maris_turks@ktf.rtu.lv)  
<https://ortus.rtu.lv/science/lv/experts/821>



- Jānis VALDMANIS** (Linguistics), b. 21.04.1948, elected 21.11.1997. DHSS. *Latvian Language Agency*. Tel.: (371) 67201680. E-mail: [janis.valdmanis@valoda.lv](mailto:janis.valdmanis@valoda.lv)
- Andrejs VASKS** (Archaeology), b. 13.06.1947, elected 23.11.2000. DHSS. *University of Latvia*. Tel.: (371) 29411980. E-mail: [andrejs.vasks@lu.lv](mailto:andrejs.vasks@lu.lv)  
<http://www.lza.lv/scientists/VasksA.htm>
- Ivans VEDINS** (Philosophy), b. 12.05.1946, elected 21.11.1997. DHSS. *Latvian Academy of Sciences*. Tel.: (371) 67592052, (371) 67599854. <http://www.lza.lv/scientists/VedinsI.htm>
- Pēteris VIDENIEKS** (Computer Science), b. 05.01.1940, elected 12.02.1987. DPTS. *Latvian Academy of Sciences*. Tel.: (371) 29203933. E-mail: [peteris.videnieks@tl.lv](mailto:peteris.videnieks@tl.lv)
- Uldis VIKMANIS** (Medicine), b. 13.11.1943, elected 26.11.1999. DCBMS. *University of Latvia*. Tel.: (371) 67034356. E-mail: [Uldis.Vikmanis@lu.lv](mailto:Uldis.Vikmanis@lu.lv)  
<http://www.lza.lv/scientists/vikmanisu.htm>
- Jānis VĪBA** (Mechanics), b. 23.12.1937, elected 24.11.1992. DPTS. *Rīga Technical University*. Tel.: (371) 67089332, (371) 67089473. E-mail: [janis.viba@rtu.lv](mailto:janis.viba@rtu.lv)  
<http://www.lza.lv/scientists/vibaj.htm>
- Ludmila VĪKSNA** (Medicine), b. 22.10.1946, elected 20.11.2003. DCBMS. *Rīga Stradiņš University*. Tel.: (371) 67014777. E-mail: [vizma.ivanova@rsu.lv](mailto:vizma.ivanova@rsu.lv)  
<http://www.lza.lv/scientists/ViksnaL.htm>
- Pēteris ZĀLĪTIS** (Forestry Sciences), b. 13.06.1937, elected 26.11.1993. DCBMS, DAFS. *Latvian State Forestry Research Institute "Silava"*. Tel.: (371) 67976717, (371) 29136962. E-mail: [peteris.zalitis@silava.lv](mailto:peteris.zalitis@silava.lv) <http://www.lza.lv/scientists/zalitisp.htm>
- Vitālijs ZELČS** (Geology), b. 03.07.1952, elected 23.11.2000. DCBMS. *University of Latvia*. Tel.: (371) 67332566. E-mail: [Vitalijs.Zelchs@lu.lv](mailto:Vitalijs.Zelchs@lu.lv) <http://www.lza.lv/scientists/zelchs.htm>
- Aivars ZEMĪTIS** (Mathematics), b. 25.05.1954, elected 20.11.2000. DPTS. *Fraunhofer Institute for Industrial Mathematics, Deutschland*. Tel.: (49-631) 316004452. E-mail: [zemitis@itwm.fraunhofer.de](mailto:zemitis@itwm.fraunhofer.de) <http://www.lza.lv/scientists/ZemitisA.htm>
- Guntis ZEMĪTIS** (Archaeology), b. 13.06.1955, elected 20.11.2008. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 67034509, (371) 26416884. E-mail: [guntis.zemitis@gmail.com](mailto:guntis.zemitis@gmail.com)
- Henriks ZENKEVIČS** (Biology), b. 04.07.1937, elected 24.11.1992. DCBMS. *Latvian Academy of Sciences*. Tel.: (371) 29236127. E-mail: [henriks.zenkevics@gmail.com](mailto:henriks.zenkevics@gmail.com)  
<http://www.lza.lv/scientists/zenkevics.htm>
- Juris ŽAGARS** (Astronomy), b. 09.02.1949, elected 20.11.2003. DPTS. *Ventspils University College*. Tel.: (371) 29441737. E-mail: [yzh@venta.lv](mailto:yzh@venta.lv); [yzh@latnet.lv](mailto:yzh@latnet.lv)  
<http://www.lanet.lv/~yzh/zhagars.html>
- Aija ŽILEVIČA** (Medicine), b. 14.05.1940, elected 25.11.1994. DCBMS. *University of Latvia*. Tel.: (371) 67399291, (371) 29481607. E-mail: [aija.zilevica@apollo.lv](mailto:aija.zilevica@apollo.lv)  
<http://www.lza.lv/scientists/zilevica.htm>
- Aivars ŽURINŠ** (Forestry Sciences), b. 04.07.1956, elected 24.11.2005. DAFS. *Latvian State Institute of Wood Chemistry*. Tel.: (371) 67550635. E-mail: [aivars@edi.lv](mailto:aivars@edi.lv)  
<http://www.lza.lv/scientists/zhurins.htm>

## ACADEMY MEMBERSHIP STATISTICS, 1993–2014

	01.01.93	01.01.2000	15.03.2005	01.06.2011	15.03.2014
Full members	68	91 (67)	98 (65)	107 (52)	119 (53)
Honorary members	40	55	51	56	57
Foreign members	57	88 (45)	92	89	92
Corresponding members	46	84	98 (85)	123 (89)	125 (91)
Total	211	318	339	375	393

The LAS has conferred the title of *Dr. honoris causa* to 77 scientists.

*Note.* Under the headings 01.01.2000 to 15.03.2014, the number of those members of the LAS is given in brackets, who are under the age of 70.

## DOCTORS *HONORIS CAUSA* OF THE ACADEMY

**Pēteris ALBERTS** (Medicine), b. 08.12.1953, conferred 19.10.1999. DCBMS. Sweden.  
Tel.: (371) 67220725. E-mail: chem@lza.lv

**Andrejs ALKSNIS** (Astronomy), b. 15.07.1928, conferred 25.05.1999. DPTS. *Institute of Astronomy, University of Latvia.* Tel.: (371) 64228406, (371) 26532664. E-mail: aalksnis@latnet.lv

**Edward ANDERS** (Chemistry), b. 21.06.1926, conferred 18.04.2000. DCBMS. USA.  
Tel./Fax: (1-650) 3436910. E-mail: lza2@anders2.com

**Zigrīda APALA** (History), b. 02.10.1936, conferred 12.10.2006. DHSS. *Institute of History of Latvia, University of Latvia.* Tel.: (371) 29543770. E-mail: z.apala@inbox.lv

**Romāns APSĪTIS** (Law), b. 13.02.1939, conferred 05.03.2002. DHSS. Latvia. Tel. (371) 20231036. E-mail: romans.apsitis@gmail.com

**Larisa BAUMANE** (Chemistry), b. 21.01.1946, conferred 20.03.2012. DCBMS. *Latvian Institute of Organic Synthesis.* Tel.: (371) 67014887. E-mail: lbaumane@osi.lv

**Ilgonis BĒRSONS** (Literary Criticism), b. 11.06.1931, conferred 11.03.2003. DHSS. Latvia. Tel.: (371) 67592790. E-mail: humana@lza.lv

**Tālvāldis BĒRZIŅŠ** (Chemistry), b. 19.06.1924, conferred 21.12.1993. DCBMS. USA.  
Tel.: (1-215) 4440403. E-mail: chem@lza.lv

**Jānis BIČEVSKIS** (Computer Science), b. 21.07.1944, conferred 22.09.2010. DPTS. *University of Latvia.* Tel.: (371) 67034472, (371) 29173629. E-mail: Janis.Bicevskis@lu.lv  
<http://www.lu.lv/par/kontaktinformacija/meklesana/persona/32092/>

**Ērika BIZDĒNA** (Chemistry), b. 14.06.1942, conferred 17.01.2012. DCBMS. *Rīga Technical University, Latvia.* Tel.: (371) 67089251, (371) 26585435. E-mail: erbi@ktf.rtu.lv  
<https://ortus.rtu.lv/science/lv/experts/1037>

**Jānis BOLIS** (Law), b. 02.02.1936, conferred 09.02.2010. DHSS. USA. Tel.: (371) 67212066, (401) 3980523. E-mail: bolisjohn2@gmail.com

**Jānis CAKULS** (History), b. 04.07.1926, conferred 02.10.2002. DHSS. *Curia Metropolitana Rigensis, Latvia.* Tel.: (371) 67224314.

**Jose Antonio CASTILHO-ALCARAS** (Physics), b. 12.10.1937, conferred 24.08.2007. DPTS. *Instituto de Física Teórica Universidade Estadual Paulista, Brazil.* Tel.: (55)(11) 33937853. E-mail: jaca@ift.unesp.br <http://www.ift.unesp.br/users/jaca/>

**Raul CHILACHAVA** (Literary Criticism), b. 15.05.1948, conferred 17.04.2008. DHSS. Ukraine. Tel.: (371) 67225889. E-mail: raulchilacava@mail.ru

- Eduards Bruno DEKSNIS** (Physics), b. 15.10.1947, conferred 21.10.1997. DPTS. *Latvia*. Tel.: (371) 29327027. E-mail: [ebd.riga@apollo.lv](mailto:ebd.riga@apollo.lv)
- Leo DRIBINS** (History), b. 03.11.1931, conferred 03.11.2009. DHSS. *Institute of Philosophy and Sociology, University of Latvia*. Tel.: (371) 28385810, (371) 29600580. E-mail: [fsi@lza.lv](mailto:fsi@lza.lv)
- Rūdolfš DUMBRAVS** (Agricultural Sciences), b. 27.04.1931, conferred 13.10.2009. DAFS. *Latvia*. Tel.: (371) 67223448. E-mail: [lmzn@lza.lv](mailto:lmzn@lza.lv)
- Guntis ENIŅŠ** (Geography), b. 18.06.1933, conferred 15.02.2000. DCBMS. *Depository of Natural Rarities, Latvian Nature Heritage Fund, Latvia*. Tel.: (371) 29424396. E-mail: [drk@lza.lv](mailto:drk@lza.lv); [guntis.enins@inbox.lv](mailto:guntis.enins@inbox.lv)
- Imants Fridrihs FREIBERGS** (Computer Science), b. 12.03.1934, conferred 27.06.1991. DPTS. *Latvia*. E-mail: [imantsfreibergs@inbox.lv](mailto:imantsfreibergs@inbox.lv)  
[http://www.president.lv/pk/content/?cat\\_id=1070&lng=en](http://www.president.lv/pk/content/?cat_id=1070&lng=en)
- Astrids FREIMANIS** (Geology), b. 21.11.1935, conferred 06.02.1996. DCBMS. *Latvia*. Tel.: (371) 67267344. E-mail: [astrids.freimanis@gmail.com](mailto:astrids.freimanis@gmail.com)
- Valdis GAVARS** (Engineering Sciences), b. 10.05.1934, conferred 30.10.2012. DPTS. *Latvia*. Tel.: (371) 67728368, (371) 29425013. E-mail: [valdis.gavars@latvenergo.lv](mailto:valdis.gavars@latvenergo.lv)  
<http://inventions.lza.lv/izg.php?id=16>
- Egils GRĪSLIS** (Philosophy), b. 19.02.1928, conferred 03.11.2005. DHSS. *Canada*. Tel.: (1-204) 4523844. E-mail: [egrislis@shaw.ca](mailto:egrislis@shaw.ca)
- Harro fon HIRSCHHEYDT** (Literature, Publishing), b. 14.04.1925, conferred 17.02.2004. DHSS. *Domus Rigensis, Latvia*. Tel./Fax: (371) 67211015. E-mail: [domus.rigensis@latnet.lv](mailto:domus.rigensis@latnet.lv)
- Kamil IDRIS** (Intellectual Property Rights), b. 26.08.1945, conferred 22.02.2005. DPTS. *Sudan*. E-mail: [kamil@uum.edu.my](mailto:kamil@uum.edu.my)
- Ilze Irēna ILZIŅA** (Computer Science), b. 12.01.1934, conferred 15.10.2008. DPTS. *Institute of Mathematics and Computer Science, University of Latvia*. Tel.: (371) 29296884. E-mail: [ilze.ilzina@lumii.lv](mailto:ilze.ilzina@lumii.lv)
- Jānis JANSONS** (Physics), b. 29.08.1944, conferred 22.10.2013. DPTS. *Institute of Solid State Physics, University of Latvia*. Tel.: (371) 67187511. E-mail: [jansonsj@cfi.lu.lv](mailto:jansonsj@cfi.lu.lv)
- Benjamin JOFFE** (Physics), b. 23.02.1931, conferred 06.09.2000. DPTS. *USA*. Tel.: (1-408) 5579534, (1-408) 2180455. E-mail: [benjamin.joffe@sbcglobal.net](mailto:benjamin.joffe@sbcglobal.net)  
[http://izgudrojumi.lza.lv/izg\\_en.php?id=20](http://izgudrojumi.lza.lv/izg_en.php?id=20)
- Edvīns KARNĪTIS** (Computer Science), b. 30.09.1940, conferred 01.11.2007. DPTS. *LR Public Utilities Commission. Latvia*. Tel.: (371) 67097203. E-mail: [Edvins.Karnitis@sprk.gov.lv](mailto:Edvins.Karnitis@sprk.gov.lv)
- Edgars KATAJS** (Linguistics), b. 03.02.1923, conferred 21.05.2004. DHSS. *Latvia*. Tel.: (371) 67261961, (371) 26554008. E-mail: [humana@lza.lv](mailto:humana@lza.lv)

- Ģirts KAUGARS** (Chemistry), b. 15.01.1938, conferred 15.03.1994. DCBMS. *USA. Tel.:* (1-269) 3750389. *E-mail:* [kaugars@charter.net](mailto:kaugars@charter.net)
- Jānis KLĒTNIĒKS** (Engineering Sciences), b. 23.06.1929, conferred 17.05.2005. DPTS. *Latvia. Tel.:* (371) 26565104. *E-mail:* [janis.kletnieks@geostar.lv](mailto:janis.kletnieks@geostar.lv)
- Sarma KĻAVIŅA** (Linguistics), b. 21.02.1941, conferred 26.05.2009. DHSS. *Latvia. Tel.:* (371) 67674398, (371) 29927971. *E-mail:* [sarmak@latnet.lv](mailto:sarmak@latnet.lv)
- Yukio KOBAYASHI** (Pharmacy), b. 26.06.1931, conferred 21.05.1992. DCBMS. *Taiho Pharmaceutical Co., Ltd, Japan. Tel.:* (81-3) 32944523. *E-mail:* [chem@lza.lv](mailto:chem@lza.lv)
- Venta KOCERE** (Literary Criticism), b. 05.06.1954, conferred 20.03.2008. DHSS. *Academic Library of the University of Latvia. Tel.:* (371) 67323261, (371) 29549145. *E-mail:* [venta.kocere@lu.lv](mailto:venta.kocere@lu.lv)
- Jacques KOOLEN** (Medicine), b. 02.02.1950, conferred 18.04.2000. DCBMS. *Catharina Hospital, Netherlands. Tel.:* (31-40) 2230430. *E-mail:* [jacques.koolen@cze.nl](mailto:jacques.koolen@cze.nl)
- Indulis KĒNIŅŠ** (History), b. 13.11.1931, conferred 12.06.2007. DHSS. *Latvia. Tel.:* (371) 63276772. *E-mail:* [inrex@inbox.lv](mailto:inrex@inbox.lv)
- Aris LĀCIS** (Medicine), b. 01.08.1936, conferred 20.03.2012. DCBMS. *Children's Clinical University Hospital, Latvia. Tel.:* (371) 26446113. *E-mail:* [aris.lacis@apollo.lv](mailto:aris.lacis@apollo.lv)
- Romans LĀCIS** (Medicine), b. 01.01.1946, conferred 11.06.2002. DCBMS. *Pauls Stradiņš Clinical University Hospital, Latvia. Tel.:* (371) 67069546. *E-mail:* [valentina@stradini.lv](mailto:valentina@stradini.lv)
- Aivars LAGZDIŅŠ** (Engineering Sciences – Mechanics), b. 20.06.1937, conferred 15.03.1994. DPTS. *Institute of Polymer Mechanics, University of Latvia. Tel.:* (371) 67543307, (371) 26349509. *E-mail:* [alberts@pmi.lv](mailto:alberts@pmi.lv)
- Paulis LAZDA** (History), b. 04.05.1938, conferred 22.09.1998. DHSS. *Museum of the Occupation of Latvia. USA. Tel.:* (1-715) 8364735. *E-mail:* [lazdapi@uwec.edu](mailto:lazdapi@uwec.edu)
- Atis LEJIŅŠ** (Political Studies), b. 28.09.1942, conferred 17.02.2004. DHSS. *LR Saeima. Tel.:* (371) 29238256. *E-mail:* [atislejins@gmail.com](mailto:atislejins@gmail.com); [atis.lejins@saeima.lv](mailto:atis.lejins@saeima.lv)
- Egils LEVITS** (Law), b. 30.06.1955, conferred 05.03.2002. DHSS. *European Court of Justice. Latvia. E-mail:* [egils@levits.eu](mailto:egils@levits.eu)
- Valdis LOKENBAHS** (Computer Science), b. 06.12.1951, conferred 04.11.2003. DPTS. *Public Utilities Commission, Latvia. Tel.:* (371) 67097200. *E-mail:* [valdis.lokenbahs@sprk.gov.lv](mailto:valdis.lokenbahs@sprk.gov.lv)
- Valts LOŽA** (Biology), b. 13.09.1926, conferred 09.01.1992. DCBMS. *Latvia. Tel.:* (371) 67754332. *E-mail:* [chem@lza.lv](mailto:chem@lza.lv)
- Juhan MAISTE** (Art), b. 10.08.1952, conferred 26.05.2009. DHSS. *University of Tartu, Estonia. Tel.:* (372) 7376507. *E-mail:* [maiste.juhan@hotmail.com](mailto:maiste.juhan@hotmail.com)
- Jack MATLOCK** (Political Studies), b. 01.10.1929, conferred 11.06.2002. DHSS. *USA. Tel.:* (1-609) 2521953. *E-mail:* [jmatlock@princeton.edu](mailto:jmatlock@princeton.edu); [jim10@columbia.edu](mailto:jim10@columbia.edu)

- Mykolas MICHELBERTAS** (History), b. 09.03.1939, conferred 21.05.2004. DHSS. Lithuania. Tel.: (370) 2687284. E-mail: humana@lza.lv
- Jerzy MICHNA** (Power Engineering), b. 17.11.1929, conferred 19.10.1999. DPTS. Deutschland. Tel./Fax.: (49-62) 2433528. E-mail: lucia.von.tansela@t-online.de; mail@ikwz.de
- Iveta OZOLANTA** (Medicine), b. 05.07.1948, conferred 03.11.2009. DCBMS. Rīga Stradiņš University, Latvia. Tel.: (371) 67409116. E-mail: iveta.ozolanta@rsu.lv <http://www.lza.lv/scientists/ozolanta.htm>
- Ruta OZOLIŅA** (Biology), b. 21.01.1930, conferred 22.10.1996. DCBMS. Latvia. Tel.: (371) 67572484. E-mail: ozolinark@gmail.com
- Pēteris PILDEGOVIČS** (Linguistics), b. 15.07.1938, conferred 26.09.2013. DHSS. Latvia. Tel.: (371) 67034366, (371) 26601550. E-mail: peteris.pildegovics@hotmail.com
- Raimo PULLAT** (History), b. 03.04.1935, conferred 22.02.2005. DHSS. Estonia. Tel./Fax: (372) 6485774. E-mail: raimopullat@hotmail.ee <http://www.hot.ee/raimopullat/>
- Jēkabs RAIPULIS** (Biology), b. 07.03.1939, conferred 03.10.1997. DCBMS. Rīga Teacher Training Education Management Academy, Latvia. Tel.: (371) 67808120. E-mail: jekabs.raipulis@rpiva.lv
- Pēteris RIVŽA** (Computer Science), b. 19.10.1947, conferred 01.11.2007. DPTS. Latvia University of Agriculture. Tel.: (371) 630 05633. E-mail: Peteris.Rivza@llu.lv; zinpror@llu.lv <http://www.llu.lv/vadiba?ri=290>
- Jānis RUKŠĀNS** (Biology), b. 05.09.1946, conferred 11.03.2003. DCBMS. Latvia. Tel.: (371) 29418440, (371) 64100326. E-mail: janis.bulb@hawk.lv
- Līga RUPERTE** (Pedagogics), b. 16.10.1932, conferred 05.11.1992. DHSS. USA. Tel.: (1-616) 4568023. E-mail: liga3x3@iserv.net
- Andris SALTUPS** (Medicine), b. 15.06.1935, conferred 18.04.2000. DCBMS. Cabrini Medical Centre, Victoria, Australia. Tel.: (61-3) 95097840. E-mail: chem@lza.lv
- Gene SHARP** (Politology), b. 21.01.1928, conferred 02.06.2005. DHSS. The Albert Einstein Institution, USA. Tel.: (1-617) 2474882. E-mail: sharp@aeinstein.org
- Boris SIMKHOVICH** (Medicine), b. 26.07.1947, conferred 30.10.2012. DCBMS. Heart Institute, Good Samaritan Hospital, Los Angeles, USA. Tel.: (213) 9774194. E-mail: simkhovi@usc.edu
- Jānis STRADIŅŠ** (History of Science), b. 10.12.1933, conferred 09.01.1992. DHSS. Latvian Academy of Sciences. Tel.: (371) 67213663. E-mail: stradins@lza.lv
- Ivars STRAUTMANIS** (Architecture), b. 19.07.1932, conferred 27.11.2001. DHSS. Latvia. Tel.: (371) 29454249. E-mail: humana@lza.lv

**Voldemārs STRĪKIS** (Agricultural Sciences), b. 24.02.1936, conferred 06.02.1996. DCBMS; DAFS. *Latvia University of Agriculture*. Tel.: (371) 29286497, (371) 63027239. E-mail: voldemars.strikis@llu.lv

**Agnis ŠTIFTS** (Medicine), b. 13.09.1923, conferred 13.10.1998. DCBMS. *Latvia*. Tel.: (371) 67403636, (371)26308478. E-mail: chem@lza.lv

**Ralejs TEPFERS** (Engineering Sciences), b. 28.12.1933, conferred 22.10.1996. DPTS. *Chalmers University of Technology, Sweden*. Tel.: (46) 314068921. E-mail: ralejs.tepfers@chalmers.se; ralefs.tepfers@tele2.se  
<http://www.chalmers.se/cee/EN/divisions/structural-engineering/people/tepfers-ralejs>

**Kaspars TŪTERS** (Medicine), b. 31.10.1937, conferred 24.10.1995. DCBMS. *Avenue Road Associates Psychoanalytic/Psychotherapy Centre, Toronto, Canada*. Tel.: (1-416) 9646777. E-mail: k.tuters@utoronto.ca

**Lilita VANAGA** (History), b. 29.07.1953, conferred 02.06.2005. DHSS. *Institute of History of Latvia, University of Latvia*. Tel.: (371) 26809527. E-mail: livanaga@gmail.com

**Mihkel VEIDERMA** (Chemistry), b. 27.12.1929, conferred 14.11.2006. DCBMS. *Estonian Academy of Sciences, Estonia*. Tel.: (372) 6202801. E-mail: Mihkel.Veiderma@akadeemia.ee

**Margārs VESTERMANIS** (History), b. 18.09.1925, conferred 12.06.2007. DHSS. *Museum "Jews in Latvia", Latvia*. Tel.: (371) 67283484. E-mail: jewish.museum.latvia@gmail.com

**Aldonis VĒRIŅŠ** (Biology), b. 06.01.1929, conferred 06.11.2001. DCBMS. *Latvia*. Tel.: (371) 67616483, (371) 29233608. E-mail: aldonis.verins@inbox.lv

**Jānis VĒTRA** (Medicine), b. 19.07.1959, conferred 26.10.2004. DCBMS. *Rīga Stradiņš University, Latvia*. Tel.: (371) 67326203, (371) 29241380. E-mail: janis.vetra@rsu.lv  
<http://www.lza.lv/scientists/vetraj.htm>

**Māra VĪKSNA** (Folklore Studies), b. 22.03.1949, conferred 22.02.2005. DHSS. *Institute of Literature, Folklore, and Art, University of Latvia*. Tel.: (371) 67228632, (371) 28634119. E-mail: mara.viksna@lulfmi.lv

**Valdis VILLERUŠS** (Art), b. 06.05.1942, conferred 05.03.2002. DHSS. *Art Academy of Latvia*. Tel.: (371) 67332202. E-mail: valdisvill@inbox.lv <http://www.studija.lv/?parent=2241>

**Līvija VOLKOVA** (Literary Criticism), b. 09.06.1931, conferred 09.02.2010. DHSS. *Latvia*. Tel.: (371) 29139840

**Ģirts ZAKIS** (Chemistry), b. 26.05.19, conferred 17.02.2009. DCBMS. *Latvia*. Tel.: (371) 67298459. E-mail: dainaz@lu.lv <http://www.lza.lv/scientists/zakisg.htm>

**Ojārs Jānis ZANDERS** (Literary Criticism), b. 11.03.1931, conferred 09.01.2001. DHSS. *Latvia*. Tel.: (371) 67317109.

**Andris ZVIRGZDS** (Biology), b. 07.09.1928, conferred 09.01.1992. DCBMS. *Latvia*. Tel.: (371) 67944228. E-mail: zandris1928@inbox.lv

## CHARTER OF THE LATVIAN ACADEMY OF SCIENCES

Adopted at the General Meeting of the Latvian Academy of Sciences  
on 22 November 1996

Ratified by the Saeima (Parliament) on 23 January 1997

### GENERAL

The Latvian Academy of Sciences is a successor of several scientific associations which previously existed in Latvia. Its predecessors are the Kurzeme Society for Literature and Art, founded in 1815 in Jelgava and the Commission of Science, founded within the Rīga Latvian Society in 1869, which in 1932 was reorganised into the Science Committee with the status of a private academy of sciences.

Since 1919, the government of the Republic of Latvia had repeatedly considered the foundation of an official Latvian Academy of Sciences. In 1927, the idea was supported by Rainis, who was then Minister of Education. In 1935, the intention to create the Latvian Academy of Sciences was expressed in public by the Prime Minister K. Ulmanis, and on 14 January 1936, by the Cabinet's Act, the Institute of History of Latvia was founded as the first constituent part of this Academy.

In Latvia, the Academy of Sciences started its work on 14 February 1946, when academy members gathered for their first General Meeting. Scientists from the University of Latvia and the Latvian Academy of Agriculture formed the core of the Academy of Sciences. When adopting the Charter and the new Statute, by the decision of the General Meeting, adopted on 14 February 1992, the Latvian Academy of Sciences was reorganised into a classical academy which united elected members — prominent scientists and other scholars.

In the restored Republic of Latvia, the Latvian Academy of Sciences facilitates the development of sciences, carries out scientific research. It takes care that all special knowledge that Latvia and the Latvian people have given and can give to the world science and culture — national culture, language, folklore, literature, social and economic experience, traditions — are realised, studied, perfected, maintained, and passed over to the future generations. It studies and preserves the historical traditions of Rīga and regions of Latvia, shows the place of the Baltic countries in the world.

The Latvian Academy of Sciences has joined the international scientific community, collaborates with other academies of sciences and scientific organizations in Europe and the world.



## Article 1. LEGAL BASIS OF THE LATVIAN ACADEMY OF SCIENCES

In the Republic of Latvia, there is one Latvian Academy of Sciences as a centre of national importance, formed by the state. The Latvian Academy of Sciences is an autonomous legal entity which consists of elected members of the Latvian Academy of Sciences and which is subsidised by the state. The Latvian Academy of Sciences functions in accordance with its Charter and Statute. The Charter is adopted by the General Meeting of the Latvian Academy of Sciences and endorsed by the Saeima (Parliament) of the Republic of Latvia.

The Latvian Academy of Sciences may associate with scientific research institutions, societies, foundations, scientific technical organisations, universities, and higher educational institutions. Their collaboration with the Latvian Academy of Sciences is based on mutual agreement. In order to fulfill the goals of the Academy, groups of scientists or institutions are formed, which may function within the Latvian Academy of Sciences.

Members of the Latvian Academy of Sciences are elected prominent Latvian and foreign scientists, and honorary members — also universally recognised Latvian scholars of other spheres.

The Latvian Academy of Sciences is a legal entity. It observes the laws of the Republic of Latvia and international legal acts.

## Article 2. GOALS AND KEY DIRECTIONS OF THE LATVIAN ACADEMY OF SCIENCES

Goals and key directions of the Latvian Academy of Sciences are:

- to develop science, to facilitate and carry out studies in the sphere of basic and applied sciences, to promote the study and development of the history, culture, and language of the Latvian people and the state, as well as to support studies connected with the natural resources of Latvia, possibilities for their optimal utilisation and protection of environment;
- to prognosticate processes of Latvia's development, to report promptly to the government and the community about scientific forecasts on desirable and undesirable consequences of different economic, cultural and social processes and projects.

## Article 3. RIGHTS OF THE LATVIAN ACADEMY OF SCIENCES

The Latvian Academy of Sciences has the rights:

- to collaborate with institutions of higher education and scientific research organisational system, to delegate its representatives for work in these institutions;

- to receive information in the Saeima commissions, ministries, and other governmental institutions on preparation and modification of laws and regulations, which are related to science and higher education, as well as to express its opinion about these documents;
- to undertake initiative in the development of new scientific trends and scientific institutions which are connected with them;
- to award a degree of the *Dr. h. c. (Doctor honoris causa)* of the Latvian Academy of Sciences to Latvian and foreign scientists;
- to propose and adopt modifications in its Charter, to submit them for endorsement to the Saeima;
- to preserve in its archives, depositories, and libraries manuscripts and documents belonging to prominent people in science, literature, art, and other spheres of culture, as well as other materials important for science and history.

#### Article 4. OBLIGATIONS OF THE LATVIAN ACADEMY OF SCIENCES

The Latvian Academy of Sciences has the obligation:

- to take an active part in the development of science policy of Latvia and to promptly advise the Saeima and government in matters of science;
- to participate in scientific expertise of different governmental programmes, in stating the research level of studies, projects, programmes, and scientific institutions;
- to recognize excellence in science of Latvia (to award prizes for outstanding contribution in science of Latvia);
- to promote principles of self-government and democracy of science and scientists of Latvia, to protect these principles in governmental structures and the mass media;
- to care about involving of researchers of new generations into science and the social protection of the retired scientists, including the state emeritus ones;
- to protect, preserve, and perfect principles and traditions of scientific research ethics, discussion, to study problems of history of Latvian science;
- to care about publishing scientific literature, the scientific level of terminology and encyclopaedias in Latvia;
- to organise scientific congresses, conferences, open meetings of the Latvian Academy of Sciences, discussions, and competitions and to popularise achievements in science;
- to scientifically supervise the depositories of Latvian science and the national cultural heritage — Academic Library of Latvia, Misiņš Library, and the Depository of Latvian Folklore;

- to develop and encourage international contacts of Latvian scientists, to collaborate with other academies of sciences, scientific unions and associations, to maintain international scientific relations and to represent science of Latvia in international scientific organisations.

Annually the Latvian Academy of Sciences publishes a report on its activities.

#### Article 5. COMPOSITION AND MANAGEMENT OF THE LATVIAN ACADEMY OF SCIENCES

Composition of the Latvian Academy of Sciences is the following: full members (academicians), honorary members, foreign members, corresponding members. Their number, procedure of nominating and discussing candidates in the scientific community, as well as order of election is determined by the Statute of the Latvian Academy of Sciences.

The highest decision-making body of the Latvian Academy of Sciences is the General Meeting, in which elected full, honorary, foreign, and corresponding members take part. Matters pertaining to the Charter and the Statute and admittance of new members are decided by full members. In order to facilitate solving of interdisciplinary problems and contacts among representatives of allied sciences, members of the Academy form divisions of sciences of the Latvian Academy of Sciences. In between general meetings, the work of the Latvian Academy of Sciences is headed by the President, who is elected by its members, and the Senate.

The General Meeting of the Latvian Academy of Sciences elects the Supervisory Council. With the purpose to organise different spheres of work of the Latvian Academy of Sciences and to take prompt decisions, the Presidium, Board, and other organisational structures are formed. Composition and duties of these structures are determined by the Statute of the Latvian Academy of Sciences.

#### Article 6. ECONOMIC BASIS OF THE LATVIAN ACADEMY OF SCIENCES

The necessary financing for work of the Latvian Academy of Sciences is subsidised from the state budget. The Latvian Academy of Sciences submits a motivated application for the following year's financing together with the annual report, according to a procedure, determined by the government. The special budget of the Latvian Academy of Sciences is formed of resources which are obtained from:

- contractual works and entrepreneurial activity;
- managing of the property;
- donations and presents;
- other sources.

Under possession or property of the Latvian Academy of Sciences may be real estate or movables — land, buildings, and other property, which has been given over to it by the state institutions, or which it has obtained as a result of its activities or on other legal basis, as well as intellectual property, currency, and securities in Latvia and abroad.

Under the supervision of the Latvian Academy of Sciences are institutions and organisations, which are necessary for its work, as well as institutions and organisations which facilitate the functioning of science.

Administration of property, belonging to the Latvian Academy of Sciences, and objects, which are under its possession and supervision, is determined by the Statute of the Latvian Academy of Sciences.

#### Article 7. STATUTE OF THE LATVIAN ACADEMY OF SCIENCES

The General Meeting of members of the Latvian Academy of Sciences independently adopts and/or modifies its Statute which may not be in contradiction with the provisions of the present Charter.

## MAIN NATIONAL GOVERNING BODIES OF SCIENCE

### MINISTRY OF EDUCATION AND SCIENCE

Vaļņu iela 2, Rīga, LV 1050, Latvia  
Tel.: (371) 67226209. Fax: (371) 67223905. E-mail: [pasts@izm.gov.lv](mailto:pasts@izm.gov.lv)  
<http://www.izm.gov.lv>

*Minister* Ina DRUVIETE

Department of Higher Education, Science and Innovation

*Director* Agrita KIOPA  
Tel.: (371) 67047983. E-mail: [agrita.kiopa@izm.gov.lv](mailto:agrita.kiopa@izm.gov.lv)

*Deputy Director* ARMANDS PLĀTE  
(*Science and Innovation*) Tel.: (371) 67047963. E-mail: [armands.plate@izm.gov.lv](mailto:armands.plate@izm.gov.lv)

### LATVIAN COUNCIL OF SCIENCE

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel.: (371) 67227790. Fax: (371) 67228421. E-mail: [lzp@lzp.gov.lv](mailto:lzp@lzp.gov.lv)  
<http://www.lzp.gov.lv>

*Chairman* Andrejs SILIŅŠ  
Tel.: (371) 67211405. E-mail: [andrejs.silins@lu.lv](mailto:andrejs.silins@lu.lv); [silins@lza.lv](mailto:silins@lza.lv)

*Vice Chairman* Jānis KLOVIŅŠ  
Tel.: (371) 67808003. E pasts: [klovins@biomed.lu.lv](mailto:klovins@biomed.lu.lv)

*Scientific Secretary* Maija BUNDULE  
Tel.: (371) 67227790. E-mail: [majja.bundule@lzp.gov.lv](mailto:majja.bundule@lzp.gov.lv);  
[majja.bundule@lza.lv](mailto:majja.bundule@lza.lv)

## ASSOCIATED INSTITUTIONS

### BALTIC CENTRE FOR STRATEGIC STUDIES, LATVIAN ACADEMY OF SCIENCES

Reg. No. 40003160765 in the Register of Associations and Foundations of Latvia

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel./Fax: (371) 67227555. E-mail: bspc@lza.lv

*Director* Tālavš JUNDZIS, full mem. LAS, *Dr.habil.sc.pol., Dr.iur.*

### CERTIFICATION CENTRE OF THE LATVIAN ACADEMY OF SCIENCES, LLC

Reg. No. 40003189652 in the Commercial Register of Latvia

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel.: (371) 67212807. E-mail: certcn@latnet.lv  
<http://www.sertifikacijascentrs.lv/>

*Director* Imants MATĪSS, full mem. LAS, *Dr.habil.sc.ing.*

### INSTITUTE OF ECONOMICS, LATVIAN ACADEMY OF SCIENCES, LTD.

Reģ. Nr. 40003324342 in the Commercial Register of Latvia

Akadēmijas laukums 1-714, Rīga, LV 1050, Latvia  
Tel.: (371) 67222830. E-mail: ei@lza.lv, economics@economics.lv

*Director* Ņina LINDE, *Dr.paed.*

## MAIN NATIONAL GOVERNING BODIES OF SCIENCE

### MINISTRY OF EDUCATION AND SCIENCE

Vaļņu iela 2, Rīga, LV 1050, Latvia  
Tel.: (371) 67226209. Fax: (371) 67223905. E-mail: [pasts@izm.gov.lv](mailto:pasts@izm.gov.lv)  
<http://www.izm.gov.lv>

*Minister* Ina DRUVIETE

Department of Higher Education, Science and Innovation

*Director* Agrita KIOPA  
Tel.: (371) 67047983. E-mail: [agrita.kiopa@izm.gov.lv](mailto:agrita.kiopa@izm.gov.lv)

*Deputy Director* ARMANDS PLĀTE  
(*Science and Innovation*) Tel.: (371) 67047963. E-mail: [armands.plate@izm.gov.lv](mailto:armands.plate@izm.gov.lv)

### LATVIAN COUNCIL OF SCIENCE

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel.: (371) 67227790. Fax: (371) 67228421. E-mail: [lzp@lzp.gov.lv](mailto:lzp@lzp.gov.lv)  
<http://www.lzp.gov.lv>

*Chairman* Andrejs SILIŅŠ  
Tel.: (371) 67211405. E-mail: [andrejs.silins@lu.lv](mailto:andrejs.silins@lu.lv); [silins@lza.lv](mailto:silins@lza.lv)

*Vice Chairman* Jānis KLOVIŅŠ  
Tel.: (371) 67808003. E-mail: [klovins@biomed.lu.lv](mailto:klovins@biomed.lu.lv)

*Scientific Secretary* Maija BUNDULE  
Tel.: (371) 67227790. E-mail: [majja.bundule@lzp.gov.lv](mailto:majja.bundule@lzp.gov.lv);  
[majja.bundule@lza.lv](mailto:majja.bundule@lza.lv)

## ASSOCIATED INSTITUTIONS

### BALTIC CENTRE FOR STRATEGIC STUDIES, LATVIAN ACADEMY OF SCIENCES

Reg. No. 40003160765 in the Register of Associations and Foundations of Latvia

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel./Fax: (371) 67227555. E-mail: bspc@lza.lv

*Director* Tālavš JUNDZIS, full mem. LAS, *Dr.habil.sc.pol., Dr.iur.*

### CERTIFICATION CENTRE OF THE LATVIAN ACADEMY OF SCIENCES, LLC

Reg. No. 40003189652 in the Commercial Register of Latvia

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel.: (371) 67212807. E-mail: certcn@latnet.lv  
<http://www.sertifikacijascentrs.lv/>

*Director* Imants MATĪSS, full mem. LAS, *Dr.habil.sc.ing.*

### INSTITUTE OF ECONOMICS, LATVIAN ACADEMY OF SCIENCES, LTD.

Reģ. Nr. 40003324342 in the Commercial Register of Latvia

Akadēmijas laukums 1-714, Rīga, LV 1050, Latvia  
Tel.: (371) 67222830. E-mail: ei@lza.lv, economics@economics.lv

*Director* Ņina LINDE, *Dr.paed.*



## DIRECTORY

### LATVIAN ACADEMY OF SCIENCES

Akadēmijas laukums 1, Rīga, LV 1050, Latvia  
Tel.: (371) 67225361. Fax: (371) 67821153. E-mail: lza@lza.lv

- President*** Ojārs SPĀRĪTIS  
Tel.: (371) 67225361. E-mail: lza@lza.lv
- Secretary*** Dace GOVINČUKA  
Tel.: (371) 67225361. E-mail: lza@lza.lv
- Personnel specialist*** Ināra AUGULE  
Tel.: (371) 67225764, +371 67225361. E-mail: lza@lza.lv
- Scientific Adviser to President***  
Jānis KRISTAPSONS  
Tel.: (371) 67223567. E-mail: jtk@lza.lv
- Vice President*** Juris EKMANIS  
Tel.: (371) 67223644, (371) 67552011, (371) 29233023.  
E-mail: ekmanis@lza.lv
- Vice President*** Tālavs JUNDZIS  
(371) 29489249. Tel./Fax: (371) 67227555. E-mail: bspc@lza.lv
- Chair of the Senate*** Jānis STRADIŅŠ  
Tel.: (371) 67213663, (371) 67555985. E-mail: stradins@lza.lv
- Scientific Secretary of the Senate*** Alma EDŽIŅA  
Tel.: (371) 67223931. E-mail: alma@lza.lv
- Personal assistant to Chair of the Senate***  
Dzintra CĒBERE  
Tel.: (371) 67225764. E-mail: lza@lza.lv
- Secretary General*** Valdis KAMPARS  
Tel.: (371) 67225361, (371) 29230958.  
E-mail: kampars@ktf.rtu.lv; lza@lza.lv
- Foreign Secretary*** Andrejs SILIŅŠ  
Tel.: (371) 67211405. E-mail: silins@lza.lv
- Chair of the Fund*** Jānis BĒRZIŅŠ  
Tel.: (371) 67034509, +371 28754810.  
E-mail: j.beerzinsh@gmail.com

#### DIVISION OF PHYSICAL AND TECHNICAL SCIENCES

*Chair* Juris JANSONS  
Tel.: (371) 29284330. E-mail: jansons@pmi.lv; fizteh@lza.lv

*Scientific Secretary* Sofja NEGREJEVA  
Tel.: (371) 67223633. E-mail: fizteh@lza.lv

#### DIVISION OF CHEMICAL, BIOLOGICAL AND MEDICAL SCIENCES

*Chair* Raimonds VALTERS  
Tel.: (371) 67220725, (371) 67089231. E-mail: rvalters@latnet.lv

*Scientific Secretary* Baiba ĀDAMSONE  
Tel.: (371) 67220725. E-mail: chem@lza.lv

#### DIVISION OF AGRICULTURE AND FORESTRY SCIENCES

*Chair* Baiba RIVŽA  
Tel.: (371) 63023739, (371) 29254469. E-mail: baiba.rivza@llu.lv

*Scientific Secretary* Kristīne POLAČENKO  
Tel.: (371) 67223448. E-mail: lmzn@lza.lv

#### DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES

*Chair* Raita KARNĪTE  
Tel.: (371) 29411607. E-mail: raita@epc.lv

*Scientific Secretary* Ilga TĀLBERGA  
Tel.: (371) 67225889. E-mail: humana@lza.lv

#### INTERNATIONAL RELATIONS

*Head of unit, Adviser to President*  
Anita DRAVENIECE  
Tel. : (371) 67227391. E-mail: int@lza.lv

*Liaison Officer* Kristaps BROKS  
Tel. : (371) 67227391. E-mail: int@lza.lv

#### CENTRE FOR EUROPEAN PROGRAMMES

*Head* Maija BUNDULE  
Tel./Fax: (371) 67227790. E-mail: maija.bundule@lza.lv

*Project coordinator* Dace TIRZĪTE  
E-mail: dace.tirzite@lza.lv

*Project coordinator* Ineta PLIKŠA  
E-mail: ineta.pliksa@lza.lv

*COST Programme National Projects administrator*

Ieva CIPRUSE  
E-mail: ieva.cipruse@lza.lv

*EUREKA Programme National project coordinator*

Ilze BEVERTE  
E-mail: beverte@edi.lv

*PROCEEDINGS OF THE LATVIAN ACADEMY OF SCIENCES*

(Žurnāls "Latvijas Zinātņu Akadēmijas Vēstis"), a bimonthly scientific journal;  
<http://www.lza.lv/vestis/vestis.htm>; <http://www.degruyter.com/view/j/prolas>

*Editor-in-charge* Arno JUNDZE  
Tel.: (371) 67229830. E-mail: vestis@lza.lv

*Chair of the Editorial Advisory Board*

Tālavš JUNDZIS  
Tel.: (371) 29489249, (371) 67227555. E-mail: bspc@lza.lv

*Vice Chair of the Editorial Advisory Board*

Īzaks RAŠALS  
Tel.: (371) 67945435. E-mail: izaks@email.lubi.edu.lv

Editorial staff of Section "A" (Social Sciences and Humanities)

*Chair of the Editorial Board*

Saulvedis CIMERMANIS  
Tel.: (371) 67225889, (371) 67565265. E-mail: kameel@inbox.lv

*Editor*

Anastasija BRICE  
Tel.: (371) 67229830. E-mail: vestis@lza.lv

Editorial staff of Section "B" (Natural, Exact, and Applied Sciences)

*Chair of the Editorial Board*

Īzaks RAŠALS  
Tel.: (371) 67945435. E-mail: izaks@email.lubi.edu.lv

*Editor*

Antra LEGZDIŅA  
Tel.: (371) 20220106. E-mail: proceed@lza.lv

*NEWSPAPER SCIENCE BULLETIN*

*Editor-in chief*

Zaiga KIPERE  
Tel.: (371) 67212706, (371) 67225361. Fax: +371 67821153.  
E-mail: alma@lza.lv, lza@lza.lv

*CENTRE FOR SCIENCE AND TECHNOLOGY STUDIES*

*Head*

Jānis KRISTAPSONS  
Tel.: (371) 67225175; (371) 67223567. E-mail: jtk@lza.lv

## ADMINISTRATION

*Director* Vitālijs KOZLOVSKIS  
Tel.: (371) 67222817. E-mail: daina@lza.lv

*Facilities Manager* Valdemārs SUVEIZDIS  
Tel.: (371) 67226539. E-mail: daina@lza.lv

*Equipment Manager* Juris PĒTERNIEKS  
Tel.: (371) 26493807. E-mail: vika@lza.lv

## IT SERVICES

*Head* Elmārs LANGE  
Tel.: (371) 67225241. E-mail: elmars.lange@lza.lv

## ACCOUNTING DEPARTMENT

*Head Accountant* Ludmila HELMANE  
Tel.: (371) 67228508. E-mail: beatrise@lza.lv, daina@lza.lv

## ARCHIVE

*Head* Rūta SKUDRA  
Tel.: (371) 67225793. E-mail: arhivs@lza.lv

LATVIAN ACADEMY OF SCIENCES  
YEARBOOK  
2014

Compiled by  
*Anita Draveniece (co-supervisor), Jānis Kristapsons (co-supervisor),  
Baiba Ādamsone, Alma Edžiņa, Sofja Negrejeva,  
Kristine Polačenko, Ilga Tālberga*

Translated by *Anda Ādamsone-Fiskoviča*

Cover art by *Indulis Martinsons*  
Photographs are from the collection of the LAS. Photos by: Jānis Brencis,  
Alma Edžiņa, Toms Grīnbergs, Toms Norde

Edited by *Antra Legzdiņa*  
Desktop publishing by *Elmārs Lange*

Published by "Zinātne": Akadēmijas laukums 1, Rīga,  
LV-1050, Latvia. Reg. no. 40003576967



On 3 June 2013, the „**Science Foundation**” was established by the Latvian Academy of Sciences. Contributions made to the Foundation are tax deductible as allowed by law.

The collected sponsorship money and earmarked donations will be used to support development projects dealing with national economy, scientific research and culture, for the allocation of fellowships and presentation of awards to young scientists

**Become a sponsor or make a donation to the “Science Foundation”**

**Reg. No. 40008211019**  
**A/S “ SEB banka”**  
**Account LV33 UNLA 0050 0210 66038**  
**Akadēmijas laukums 1**  
**Rīga, LV 1050**