

The Estonian Academy of Sciences

(originally published: ALLEA Biennial Yearbook 2006; updated: January 2009)

Origins and mission of the Academy

The Estonian Academy of Sciences was founded in 1938 as an association of top-level scientists and scholars with commitment and responsibility to advance scientific research and represent Estonian science nationally and internationally. The primary mission of the Academy is to contribute to the building of knowledge-based Estonia, the fostering of new knowledge adaptation for economic growth and improvement of the quality of life in Estonia, the enhancement of public understanding and appreciation of science and scientific methods of thought.

To achieve its objectives the Academy organises various activities relying on the intellectual power of its Members. It provides independent, highly professional scientific expertise and science-policy advice, promotes excellence in research, communicates and disseminates knowledge, enhances public awareness of science and scientists, encourages research co-operation at national and international levels.

Motto of the Academy

Facta non solum verba – is the guiding principle of the Academy in all its activities.

Legal status and organization of the Academy

The Estonian Academy of Sciences is a legal entity in public law which operates pursuant to the Estonian Academy of Sciences Act (<http://www.legaltext.ee/text/en/X90022.htm>) , the Organisation of Research and Development Act (<http://www.legaltext.ee/text/en/X60038K3.htm>), its statutes and other legislation. The Academy is an autonomous organisation with the right to act independently:

- establish its statutes;
- elect its members;
- determine its organisational structure;
- choose the directions and manners of its activities and the partners;
- decide on the use and disposal of property and funds;
- decide on the use of the results of its activities.

The Statutes of the Academy and the amendments thereto are approved by the General Assembly of the Estonian Academy of Sciences and registered by the Ministry of Education and Research.

Structure

Membership of the Academy is composed of full members, whose number is limited to 60 and foreign members, whose number is determined by the General Assembly. Membership in the Academy is for life. The Academy has currently 58 full members and 19 foreign members (as of January 2009). The General Assembly is the highest decision-making body of the Academy, formed by all members of the Estonian Academy of Sciences. The meeting of the General Assembly is usually held twice a year. The Board is the collegial directing body of the Academy acting between the sessions of the General Assembly. The Board includes the President, Vice-Presidents, the Secretary-General, heads of divisions and non-executive members elected by the General Assembly from among the full members.

A *Division* unites the full members and foreign members of a corresponding scientific field and the institutions of the Academy in partnership activities with other R&D institutions and learned societies of the same scientific field. The Academy has four divisions:

- Division of Astronomy and Physics;
- Division of Informatics and Engineering;
- Division of Biology, Geology and Chemistry;
- Division of the Humanities and Social Sciences.

The *Office* organises the administrative and financial as well as other activities of the Academy in compliance with the resolutions of the General Assembly and the Board. The Office operates under the supervision of the Secretary-General according to the decisions approved by the Board.

The role of members of the Academy

Members of the Academy are in their majority acting as leading experts and scientists, conducting research and working as faculty members at universities. Additionally to their main occupation, many members of the Academy are engaged as experts and advisers, sitting on national expert panels and advisory councils for the Parliament, the Government and other state authorities (e.g. Academic Council of the President of the Republic, Research and Development Council, Estonian Research Council, Council of the Estonian Science Foundation, National Science Prizes Committee, R&D Strategy Committee, etc.) and participating in drafting legal acts relating to R&D activities in Estonia.

Members of the Academy represent the Estonian Academy of Sciences, the Estonian scientific community as well as the whole society in various EU structures (expert committees and advisory boards). Quite a few members of the Academy are occupied on editorial and advisory boards of international scientific organisations and scientific journals.

Councils and commissions

There are eight expert panels at the Academy:

- Energy Council;
- Council of Population and Public Health;
- Publishing Council;
- Council of Associated Societies;
- Council for International Exchanges;
- Nature Protection Commission;
- Commission of Meteoritics;
- Marine Commission.

The objective and activities of the working groups are focussed on joint discussions for elaborating and shaping opinions, analysing diverse problems and preparing plans and recommendations on topical issues of their special fields of study.

Institutions

The Academy may set up institutions with their own budget and bank account, whose functions and bases of activities are established in the statutes of the institutions. The Academy has two institutions:

- *Under and Tuglas Literature Centre* (<http://www.utkk.ee/eng/contacts.html>), whose main tasks are the study of texts from Estonian written culture in both historical and theoretical perspective, the analysis of Estonian literature in the contexts of historical Baltic literary space and world literature, and the development of literary and cultural theory in close connection with the newest trends in the world.

- *Estonian Academy Publishers* (<http://www.kirj.ee/>) are the leading publishers of scientific periodical literature in Estonia, whose production is practically extending over all essential fields of contemporary science. The Publishers issue nine titles of peer-reviewed journals: '*Acta Historica Tallinnensia*'; '*Estonian Journal of Archaeology*'; '*Estonian Journal of Earth Sciences*'; '*Estonian Journal of Ecology*'; '*Estonian Journal of Engineering*'; '*Linguistica Uralica*'; '*Oil Shale*'; '*Proceedings of the Estonian Academy of Sciences*' and '*Trames*'. They also publish non-periodical scientific literature (monographs, collections of papers, yearbooks, etc.). All journals are available in electronic format. Online access to the full text of separate titles is provided either by EBSCO host databases or CEEOL online archive.

Associated institutions, societies and unions

Research and development institutes, cultural establishments and learned societies, whose activities and objectives comply with the interests and aims of the Academy, may associate with the Academy. Relations between a particular associated institution or society and the Academy, the mutual rights and obligations are provided for in the Statutes of the Academy and an agreement of association. Since 1989 agreements of association have been signed with 19 partners (8 institutions (<http://www.akadeemia.ee/en/academy/associated>), 11 learned societies and unions (<http://www.akadeemia.ee/en/academy/unions/>)).

Activities

With the aim to fulfil its tasks the Academy:

- Initiates, organises and co-ordinates scientific research;
- Develops international scientific co-operation and represents the Estonian science in international organisations;
- Publishes materials on scientific and popular science issues;
- Furthers co-operation with universities and other research institutions and contributes to training of new generations of scientists;
- Organises scientific colloquia, conferences and meetings;
- Holds contests of research works and awards prizes for scientific research works;
- Grants scholarships and research benefits to scientists and university students;
- Promotes activities communicating science to general public;
- Provides counselling to the Parliament, the Government and state authorities;
- Participates in drafting legal acts relating to R&D activities;
- Participates through its representatives in the work of Estonian R&D institutions, foundations, decision-making bodies and expert panels;
- Submits recommendations with regard to financing of the Estonian R&D activities and science organisation;
- Contributes to realisation of the creative potential of scientists and protects their rights.

The Development Plan of the Estonian Academy of Sciences for 2006–2010 was approved by the General Assembly in 2006. The Development Plan specified the directions of activity for the forthcoming years, with a view to enhance its role and responsibility in channelling the development of research and high technology innovation, designing the national research and development strategy, promoting international scientific co-operation with the European Union as well as other countries.

Research Professors

The position of Research Professor was established at the Estonian Academy of Sciences in 2001. This Professorship confers an advantage to top-level Estonian scientists to conduct their scientific research to the exclusion of the regular chores of a faculty member during three-year period. The first three

Research Professors were elected by the Board of the Academy in 2002. Contests for successive terms were held in 2005 and 2008, filling three vacancies up to 2011. Two terms of Research Professorship have been successfully completed with research performance assessed as excellent in all respects.

The Estonian Academy of Sciences Foundation

The Estonian Academy of Sciences Foundation was established at the Estonian National Culture Foundation on 1 May 2006 with the aim of supporting the research activities of young Estonian scientists holding a doctorate. The Foundation is open for contributions.

Medals, prizes and scholarships

The *Medal of the Estonian Academy of Sciences* is the highest prize of the Academy. It is awarded to individuals for outstanding services in developing Estonian science or for great contribution to the tasks of the Estonian Academy of Sciences.

The *Letter of Thanks of the Academy* is the prize of the Academy, conferred to employees of the Academy or to other persons to recognize their long and dedicated work for the Academy as well as for outstanding efforts in fulfilment of the mission of the Academy, incl. preparation and conducting major events.

Memorial medals of the Academy are awarded to recognize outstanding research achievements in Estonia:

- Nikolai Alumäe Medal in informatics and engineering;
- Karl Schlossmann Medal in medicine and related areas;
- Paul Ariste Medal in social sciences and the humanities;
- Wilhelm Ostwald Medal in chemistry and related areas;
- Karl Ernst von Baer Medal in life and earth sciences.

Memorial prizes of the Academy *are awarded to highlight excellence in Estonian research:*

- Bernhard Schmidt Prize to recognize achievements pertaining to research and development activities and practical implementation of research findings of young scientists and engineers working in Estonia.
- Karl Ernst von Baer Prize to recognize research findings attained in Estonia in the area of biology, geography and geology.

Scholarships of the Academy have been initiated to support completion of monographic research works and popular science books, their layout and editing.

The Academy and young people in science

The Academy recognises the fundamental relevance of young people for the knowledge-based society and is concerned about the ongoing ageing process within the scientific community due to meagre accession of younger generation of scientists. Therefore, the Academy guidelines for activities formulate a number of adequate steps to be taken in order to promote knowledge in the contemporary society, attract talented youth for a career in science and to effect significant changes in the general way of thinking. In co-operation with other scientific organisations and state authorities, the Academy seeks feasible solutions to problems arising (typically for a small country) from limited (human) resources.

The Estonian Academy of Sciences awards annual Student Research Prizes with the aim of highlighting outstanding young authors for excellent results in research and support talented students in their independent research effort. Problems impeding recruitment of talented students to science and obstacles to an academic career were discussed at a conference convened by the Academy under the

title 'Formation of the Young Generation of Scientists in Estonia – the Institution of Post-doctors', with the participation of experienced scientists as well as young scientists at the very beginning of their research careers.

The book 'The Young in Science' was published by the Academy in 2000 with a view to reveal the results of the youth targeted activities, bringing together a selected group of the 21st century creators – though small in size, yet illustrious by virtue of its scientific potential.

Furthermore, one should not dismiss the individual responsibility of the Members of the Academy as mentors and educators as to transferring their knowledge, creating schools of thought, teaching – and also inspiring – the next generation.

The Academy and the society

The Academy has a distinct role in the communication system between science and society. The Academy seeks to further balanced and inspirational development of communication between scientists and the society in Estonia by bringing together experts on science policy, scientists, media representatives and the public. It organises on-going conferences 'Science and Society: Charting the Future' with the primary goal of defining and addressing a clearly posed question: What is the best way for a small country, with limited human and financial resources, to develop and use its scientific and technological potential in the service of society? It has remained a key issue, calling for well-advised judgement of possible measures for adapting the Estonian research system – as a part of the European and World Research Area – to meet the changes in the society and how to balance the needs of the society for concrete answers which can be applied to treat specific questions and the basic needs of science for independence and room for creative discoveries.

The Academy's strategic objectives in scientific communication are:

- promoting interest towards science and technology;
- furthering the dialogue between citizens and the scientific community;
- enhancing society's understanding of the impact of scientific innovation and challenges of scientific research in Estonia as part of Europe and the world in general.

The Academy has been a partner organisation for conducting the European Researchers' Night project in Estonia since 2006 with the aim of bringing the everyday work of scientists closer to public and presenting researchers as a community of interesting, attractive and open-minded people.

Publications

The first Year Book was published two years after the Academy was founded, bearing 1940 as its publication date. The publication was discontinued until 1996 due to the course of historical events. Electronic version of the most recently published volume of the traditional Year Book is always available on the Academy's website.

By today the list of works published by the Academy has been replenished by several new titles:

In 1997 the Estonian Academy of Sciences published for the first time the book 'National Science Prizes of the Republic of Estonia'. In June 2008 the Academy presented the 12th book in this series, providing an overview of the 2008 prize-winning researchers, research teams and their work.

Series of the Academy known by the public as the 'blue books' (due to the blue cover design) consists of 12 books:

- Membership of the Estonian Academy of Sciences II. 1938–1998;
- Estonian Academy of Sciences. Overviews and reminiscences;

- Year of Jubilee of the Estonian Academy of Sciences – 1998;
- The Youth in Science;
- Estonian Science Reform – Advantages and Disadvantages;
- Scientific Thought in Estonia. Engineering;
- Scientific Thought in Estonia. Medical Sciences;
- Scientific Thought in Estonia. Exact Sciences;
- Scientific Thought in Estonia. Engineering II;
- Estonian Academy of Sciences. History. Developments and Conclusions;
- Estonian Academy of Sciences. Years in the Academy;
- Estonian Academy of Sciences. Bibliography 1919–2007.

The Academy also publishes brochures, booklets, proceedings of conferences and seminars as well as publications in series named 'From Science to Society' (e.g. 'From the Humanities to society – ideology and technology', 'Marine Research and Its Applications', 'Climatic Change and Forecast of Its Impact'); 'New Trends in Science' (e.g. 'Perspective Trends in Informatics', 'Neurobiology: Knowledge and Applications') and etc.

In 2004 the Academy jointly with the Association of the Centres of Excellence of Estonian Science published a collection titled 'Centres of Excellence of Estonian Science' (also available on the website of the Academy).

A list of publications of all members of the Academy for the corresponding year is annually presented in the Year Book.

International relations

The Act and Statutes of the Estonian Academy of Sciences list promotion of scientific co-operation at national and international levels among the main responsibilities of the Academy. The Academy's international activities fall into the following major areas:

Representation of Estonian science in various international organisations; support to Estonian National Committees for international scientific unions, dissemination of information about such activities.

The Academy is represented in the following all-European and world-wide scientific organisations: ALLEA, European Science Foundation, ICSU, UAI (*Union Académique Internationale*), IAP (InterAcademy Panel on International Issues), EASAC (European Academies' Science Advisory Council). Since 2006, the ALLEA presidency is lead by Professor Jüri Engelbrecht, Vice President of the EAS.

Participation in various EU structures (expert committees and advisory boards, EU FP programmes and projects, etc.).

The Estonian Academy of Sciences is a Bridgehead Organisation of the European Network of Mobility Centres (EURAXESS; formerly ERA-MORE), providing researchers and their families with customised assistance in all mobility-related issues. The network gets financial support from the European Commission, aiming at facilitating the researchers' mobility in Europe. As authorised by Ministry of Education and Research, the EAS is involved (as a partner) in the EU 6th FP project "Complexity-NET" ('Developing ERA-NET on Complexity'). The aim of the project is to map complexity studies in Europe and create an environment that would enable the coordination of national activities in complexity science and complex systems. Since 2006, the EAS has participated as a partner in the 7th FP project "Researchers' Night", targeted at popularisation of researchers and profession of scientist.

Bilateral co-operation with academies and other partner institutions on the basis of co-operation agreements.

The EAS fosters international mobility of researchers and aims at facilitating scientific networking. The agreements on scientific co-operation signed with partner institutions in other countries (in total 29) allow the Academy to draw on goodwill and experience of partners in shaping its own strategies and co-

operation tools. On the basis of bilateral agreements the Academy runs a scientific exchange programme, hosting around a hundred visiting researchers per year and nominating approximately 120 Estonian scientists and scholars per year for study and conference visits abroad. The Estonian Academy of Sciences organises and participates in various joint scientific events (incl. traditional Baltic Conferences on Intellectual Co-operation).