

ADVISORY ROLE OF ACADEMIES IN THE INFORMATION-RICH SOCIETY

22–23 October 2018 in Tallinn



Estonian Academy of Sciences
with partners: Estonian Research Council,
University of Tartu, TalTech

The core commitment of academies of science, according to The French *Académie des Sciences*, is twofold: the advancement of science and the advice to government authorities. It is a double calling that has been reinforced over time, as and when our knowledge base itself has progressed.

This year is particularly important for Estonia and the Estonian Academy of Sciences. While the Republic of Estonia, established in 1918, rejoices its Centenary, the Academy celebrates its 80th anniversary. This double festivity calls for invigorating the interrelations between the academic landscape and the leadership of the country for the next century. While the production of new knowledge has been and remains a corner stone of the Academy, a rapidly growing task of a contemporary academy is providing scientific advice.

Inspired by the Tallinn Call for Action and the outcome of the subsequent SAPEA (Science Advice for Policy by European Academies) workshop during the Estonian EU presidency in October 2017, the Estonian Academy of Sciences calls for further elaboration of the options, challenges and mechanisms of advice on scientific matters in the contemporary society that is oversaturated by information.

To discuss these matters, the Estonian Academy of Sciences is to organise the conference “Advisory role of academies in the information-rich society” on 22–23 October 2018 in Tallinn.

The starting point and corner stone of meaningful advice is the production of excellent science and extensive understanding of the big picture. This knowledge will create meaning and potential societal impact of the range of cutting edge research in all fields of science.

The message of science is presented, among others, by Prof Sierd Cloetingh (president of the Academia Europaea and president of COST Association; former vice president of European Research Council) and Prof Antonio Loprieno (president of the Swiss Academies of Arts and Sciences and president of ALLEA – All European Academies). The view of research universities is offered by Dr Katrien Maes (deputy secretary-general of the League of European Research Universities LERU).

An equally important constituent is *how the excellent science is converted into advice*. This topic will be commented on by high-level experts in this rapidly growing field: Dr Johannes Klumpers (head of the Science Advice Mechanism [SAM] Unit in the European Commission) and Prof Janusz Bujnicki, member of the High Level Group of the SAM. Their messages will be complemented by an insight into problems that are faced by academies in other parts of the world, for example in Nicaragua as presented by Prof Jorge Huete, Academy of Sciences of Nicaragua.

Similarly to uncommunicated research (that is unfinished research as Dame Anne Glover has said), poorly communicated advice is useless. *The viewpoint of recipients of science advice* will be exemplified and commented on by top level decision-makers such as Dr Robert-Jan Smits (former director-general of the DG Research and Innovation (RTD) at the European Commission) or Prof Marju Lauristin (former minister in Estonia and until very recently member of the European Parliament).

DAY 1: 22 OCTOBER 2018

13:00–14:00 Registration, welcome coffee, light lunch

14:00–14:15 Opening

Mr **Eiki Nestor** (President, *Riigikogu* – Parliament of Estonia)

Prof **Tarmo Soomere** (President, Estonian Academy of Sciences)

SESSION 1: THE MESSAGE OF SCIENCE

Chair: Prof **Edwin Kreuzer** (President, Academy of Sciences and Humanities in Hamburg)

Invited presentations

14:15–14:45 Leveraging scientific excellence for policy-making in Europe: Cooperation between Academia Europaea, the Young Academy of Europe and Association for European Cooperation in Science & Technology (COST)

Prof **Sierd Cloetingh** (President, Academia Europea and COST)

14:45–15:15 The role of academies in the transmission of science

Prof **Antonio Loprieno** (President, ALLEA)

15:15–15:45 What are universities for? Is it time for a New Deal?

Dr **Katrien Maes** (Deputy Secretary-General, LERU)

Presentations of best practice from Estonian universities

16:15–16:30 Prof **Jakob Kübarsepp** (Tallinn University of Technology: Estonian Academy of Sciences)

16:30–16:45 Dr **Mark Fišel** (University of Tartu)

16:45–17:00 Prof **Allan Puur** (Tallinn University)

17:00–17:15 Prof **Arvo Viltrop** (Estonian University of Life Sciences)

17:20–18:00 Panel discussion

Prof **Jorge Huete**, facilitator (Academy of Sciences of Nicaragua)

Dr **Anne-Marie Coriat** (Head, UK and Europe Research Landscape, Wellcome Trust)

Prof **Edwin Kreuzer** (President, Academy of Sciences and Humanities in Hamburg)

Prof **Andres Metspalu** (Council of Estonian Centres of Excellence; University of Tartu; Estonian Academy of Sciences)

Dr **Oliver Väärtnõu** (Cybemetica Ltd; Research and Development Council)

18:00–18:30 Addresses from sister academies

19:00 Reception and dinner hosted by the President of the Estonian Academy of Sciences (by invitations)

DAY 2: 23 OCTOBER 2018

SESSION 2: CONVERTING SCIENCE INTO ADVICE

Chair: Prof **Kari Raivio** (*Finnish Academy of Science and Letters*)

Invited presentations

- 9:00–9:30 How to convert science into advice?
Dr **Johannes Klumpers** (Head, Scientific Advice Mechanism Unit (SAM), European Commission)
- 9:30–10:00 Science-for-policy and policy-for-science advice: National and European perspective – Prof **Janusz Bujnicki** (SAM High Level Group; Polish Academy of Sciences)

10:00–10:30 Successful scientific advising for the proposed Interoceanic Canal in Nicaragua. The role played by local and international scientific organizations
Prof **Jorge Huete** (Founding Member, Academy of Sciences of Nicaragua)

10:30–11:00 Coffee break

Presentations of best practice

11:00–11:15 Dr **Angela Ivask** (Research Advisor, Ministry of Social Affairs)

11:15–11:30 Dr **Meelis Kitsing** (Research Manager, Foresight Centre, Parliament of Estonia)

11:30–11:45 Prof **Kevin Parnell** (Tallinn University of Technology; James Cook University)

11:45–12:00 Mr **Kaupo Reede** (Director, Economic Development Department, Ministry of Economic Affairs and Communications)

12:00–12:40 Panel discussion

Prof **Kari Raivio**, facilitator (Finnish Academy of Science and Letters)

Dr **Johannes Klumpers** (Head, Scientific Advice Mechanism Unit, European Commission)

Prof **Urmas Varblane** (University of Tartu; Supervisory Board of Estonian Central Bank; Estonian Academy of Sciences)

Dr mult **Liina Eek** (Programme Manager, Estonian Research Council)

Prof **Kevin Parnell** (Tallinn University of Technology; James Cook University)

12:45–13:45 Lunch

SESSION 3: TRANSFERRING THE ADVICE INTO MOMENTUM

Chair: **Prof Mart Saarma** (University of Helsinki; Estonian Academy of Sciences)

Invited presentations

- 13:45–14:15 Scientific support to policy-making: 5 ingredients for success
 Dr **Robert-Jan Smits** (Open Access Envoy, European Commission)
- 14:15–14:45 Academic versus political interest
 Prof **Marju Lauristin** (Institute of Social Studies, University of Tartu)

Reflections

- 14:45–14:55 The age of innocence: A public call for scientists and politicians to become communicators and educators – Prof **Ülle Madise** (Chancellor of Justice)
- 14:55–15:05 The coming of the caravan of fools
 Mr **Alar Karis** (Director, Estonian National Museum; Auditor General 2013–2018)

15:10–15:50 Closing discussion

Prof **Mart Saarma**, facilitator (University of Helsinki; Estonian Academy of Sciences)

Mr **Siim Kallas** (Vice President, European Commission 2004–2014)

HE Mr **Christoph Eichhorn** (German Ambassador to Estonia)

Mr **Hanno Tomberg** (Member of the Board, Foundation Archimedes)

Mr **Henry Kattago** (Strategy Director, Government Office of Estonia)



SESSION 1

THE MESSAGE OF SCIENCE

CHAired BY PROF EDWIN KREUZER

How much excellent science do we have? How is it best to operationalise science so that it can provide excellent advice? How can scientists and their organisations be mobilised towards driving (rather than simply informing or steering) society?

President, Academia Europaea

**President, Association for
European Cooperation in Science &
Technology (COST)**



Sierd Cloetingh is a distinguished professor at Utrecht University. His research field is earth sciences. He has published more than 350 papers and has been a promotor of more than 75 PhD students of 18 different nationalities. Sierd Cloetingh has received honorary doctorates from five European universities and won numerous medals and awards. He is a member of several academies and was distinguished in 2006 as Chevalier de Legion d'Honneur and in 2014 as Knight of the Royal Order of the Netherlands Lion for his contributions to science and European scientific cooperation in research and education.

Leveraging scientific excellence for policy-making in Europe: Cooperation between Academia Europaea (AE), the Young Academy of Europe (YAE) and COST

Academia Europaea plays a key role in the European Scientific Advice Mechanism (SAM), as one of the five partners in the Science Advice for Policy by European Academies (SAPEA) consortium. Since its launch in November 2016, SAPEA has provided evidence review reports for the European Commission. The first to be coordinated by SAPEA was *Food from the Oceans*, with Academia Europaea as the Lead Academy for the project. Academia Europaea is pleased to be SAPEA's Lead Academy for the *Making Sense of Science* topic that examines the vital issue of how good science advice can be provided to policy-makers under conditions of scientific complexity, uncertainty and ambiguity. Close cooperation between AE, the YAE and COST is integral to our work.



**President, All European Academies
(ALLEA)**

PROF ANTONIO LOPRIENO

Antonio Loprieno is an Egyptologist with interests in linguistics and cultural history who has published widely on Ancient Egyptian language, literature and religion. He served as the rector of the University of Basel (2006–2015) and the president of the Swiss Rector's Conference. Among other positions, he holds the presidency of the Austrian Science Board (Österreichischer Wissenschaftsrat). He now combines teaching and research with various functions in science management, such as the president of the Swiss Academies of Sciences and of ALLEA since 2018.

The role of academies in the transmission of science

The presentation will focus on the specificities of the academies in creating a bridge between the production and the implementation of science. While universities are increasingly concerned with their own scientific visibility, academies can play a less institutionally biased role and contribute to the primacy of scientific discourse in European societies.

**Deputy Secretary-General, League
of European Research Universities
(LERU)**



Katrien Maes is the deputy secretary-general of LERU, a network of 23 renowned universities, which advocates the values of research universities across Europe and beyond. She has been with LERU since 2004, having co-authored or reviewed many LERU policy papers – recent ones about societal impact, interdisciplinarity, citizen science, etc. As an expert in EU research, innovation and higher education policies, she serves on several advisory groups. Katrien Maes has a PhD in Linguistics. She was an assistant professor at the University of Delaware (1992–2002), working on second language acquisition, pedagogy, syntax and Italian language.

What are universities for? Is it time for a New Deal?

University is one of the oldest institutions in the world. The pursuit of creating new knowledge “just for knowledge’s sake” and of excellence in science is written into its DNA and this will and should not change. At the same time, universities’ imperative to engage with society is more intensively recognised and universities take this up in many ways. In our deeply connected and globalised world, strong external and internal forces are impacting universities, challenging them to their core. How do research universities engage and where are their priorities? While universities (may) have and continue to deserve a high degree of autonomy and freedom to determine their path, it is clear that we need new paths for dialogue and new kinds of agreements with the society. What are the implications for universities and science advice?

PRESENTATIONS OF BEST PRACTICE FROM ESTONIAN UNIVERSITIES





Member of the Estonian Academy of Sciences, Professor of Materials Engineering Jakob Kübarsepp obtained his PhD in Powder Metallurgy and Composite Materials in 1980 from Moscow State University of Fine Chemical Technologies. His research focuses on the development, characterization and up-scaling of advanced wear-resistant ceramic-based composites. He has published over 200 papers. Jakob Kübarsepp has been awarded the National Research Award in the field of technological sciences twice, in 1985 and 2005.

Insight into user-driven and academic research in science of hard materials

There are several pathways for generating research value. A characteristic feature of technological (engineering) sciences in value generation is collaboration with industry and public sector at research and development projects. An insight will be given into three user-driven problems and research results involving development of hard, ceramic-based materials for different applications. What can universities gain from the abovementioned partnership and what are the problems that may emerge are some of the topics to be addressed.



University of Tartu

DR MARK FIŠEL

Mark Fišel is the head of the Chair of Natural Language Processing at the Institute of Computer Science of the University of Tartu. His research mainly involves applying machine learning methods to computational modelling of natural language.

Zero-shot monolingual and cross-lingual style transfer

The talk addresses simultaneous translation of sentences between two human languages as well as paraphrasing them between different styles, like formal to colloquial. This task is particularly challenging since there are very few examples of sentences with the same meaning but changed style, so conventional methods of supervised machine learning cannot be applied.



Allan Puur is a professor of demography at Tallinn University. His research interests relate to contemporary demographic development in Estonia and comparative population studies. In recent years, he has published on fertility and family dynamics, manifestations of the second demographic transition, gender equity, and other themes. He is also actively engaged in developing research infrastructure for demographic research and international networking.

Can small disciplines make a contribution? Some insights into demography in Estonia

Small countries tend to face a challenge of maintaining the diversity of academic life. The drive for excellence and economies of scale may be, to some extent, at odds with the latter goal. This presentation will give a few examples that underscore the importance of scholarly expertise for formulating population-related policies. The illustrations are drawn from the analysis of fertility trends and population projections for Estonia.



Arvo Viltrop is a professor of veterinary bio- and population medicine at the Institute of Veterinary Medicine and Animal Sciences of the Estonian University of Life Sciences. He defended his PhD degree in 2002 on Epidemiology of Bovine Viral Diarrhoea. He has been involved in research on epidemiology of various infections, including honey bee, animal and human pathogens, and since 2014 on African swine fever to Estonia. From July 2018 he is the member of the Scientific Panel on Animal Health and Welfare of the European Food Safety Agency (EFSA).

African swine fever epidemic in the Baltic States – changing the paradigm

African swine fever, a devastating disease of domestic pigs and wild boar, entered the European Union at the beginning of 2014, reaching Lithuania and Poland. In Estonia the disease was first detected in September 2014 in wild boars. Very soon after the incursion it became clear that the present understanding of the epidemiology of the disease is not valid in this part of the world; thus, the text books must be upgraded and the state veterinary authorities have to change their risk assessments and disease control plans and practices.

PANEL DISCUSSION

**Founding Member, Academy of
Sciences of Nicaragua**

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**Head, UK and Europe Research
Landscape, Wellcome Trust**

DR ANNE-MARIE CORIAT

Dr Anne-Marie Coriat received her degree in Chemistry and Environmental Sciences from Cardiff University. She worked in the Birnbaumer lab at Baylor College of Medicine in Houston, Texas and in the National Health Service as a biochemist before completing a PhD in Manchester. Before joining Wellcome, Anne-Marie was the director for Capacity Skills and Infrastructure at the Medical Research Council and chair of the Research Councils UK Research Group. Anne-Marie has worked in research funding and policy for over 20 years, cooperating closely with institutions, researchers, policy-makers and funders.

Food for thought

Research takes place in a diverse and complex social environment. Scientific knowledge achieves its greatest value when it is readily available to be used by others. There are a number of ways in which funders and the academics can and work in partnership to increase the likelihood that scientific knowledge will be used in policy-making. These include ensuring that knowledge is accessible and usable, encouraging researchers to consider the political and policy impacts of their work and developing policies and approaches that support positive research culture and thriving research system.

**President, Academy of Sciences and
Humanities in Hamburg**



Edwin Kreuzer graduated from the Technical University of Munich and received his doctoral degree and habilitation at the University of Stuttgart. He was a professor at the University of Stuttgart and Hamburg University of Technology, also a visiting professor at University of California at Berkeley, Federal University of Rio de Janeiro, and University of Illinois at Urbana-Champaign. He is the president of the Academy of Sciences and Humanities in Hamburg since 2013 and the vice president of the Union of the German Academies of Sciences and Humanities.

Food for thought

Audience of the session will be provided an insight into the German academy system.



University of Tartu

**Council of Estonian Centres of
Excellence**

Andres Metspalu obtained his PhD in Molecular Biology in 1979. His main scientific interests are human genomics, genetics of complex diseases, population based biobanks and application of the precision medicine in health care. He has published over 350 papers. Andres Metspalu is the former president of the European Society of Human Genetics. In 2010 he was elected to the Estonian Academy of Sciences and was awarded Doctor Honoris Causa from Vilnius University. He has supervised 20 PhD theses, is serving in several national and international committees, editorial boards and has, among other awards and honours, received the Order of the Estonian Red Cross 3rd Class and L'Ordre des Palmes Academiques from the Republic of France.

Food for thought

In order to support the excellent science and outstanding scientists, a special instrument – centre of excellence (CoE) was created by Estonian Research Council. From more than 20 proposals nine were selected to be funded until 2021, covering not only natural sciences, engineering and information technology, but also humanities. The Council of CoE organises public conferences and media coverage with the aim to introduce the work and results to the general public, thus serving the utmost goal of all research – to improve people's life. A few of such examples include smart buildings, personal medicine, new materials in energy storage, and Estonian studies.



SESSION 2

CONVERTING SCIENCE INTO ADVICE

CHAired BY PROF KARI RAIVIO

Virtually everybody on the academic landscape agrees that we should do that. The core question, however, is: how we can do that? What kind of rules govern this advice? How complicated or simplified should it be? How do we avoid failures, mistrust and misinterpretations? Who should talk and to whom? How do we build up a sustainable advice mechanism?

**Head, Scientific Advice Mechanism
Unit (SAM), European Commission**

Johannes Klumpers leads the recently created SAM in the European Commission. He studied forestry and wood technology and obtained his PhD from the French Ecole Nationale du Génie Rural, des Eaux et Forêts (ENGREF). After several years of industrial research in Sweden, he joined the European Commission's Directorate-General for Research and Innovation in 1998 and has worked there on a variety of topics, from renewable raw materials and industrial processes to gender, science in society, finance and budget. He has been in his current post since its establishment, 1 October 2015.

How to convert science into advice?

When and why do politicians listen to science and when do they not? Scientific advisors are giving advice in many forms and to facilitate consideration or uptake of scientific advice by policy-makers, research results have to be analysed, summarised and presented in a way that will help the assimilation process by policy-makers. The European Commission's Group of Chief Scientific Advisors, in collaboration with European Science Academies (SAPEA consortium), as well as the European Group on Ethics in Science and Technologies (EGE) have acquired valuable experience in this respect.



SAM High Level Group

Janusz Bujnicki is a professor of biology whose research combines bioinformatics, structural biology, and synthetic biology, currently the youngest member of the Polish Academy of Sciences (elected 2016). His scientific achievements include the development of methods for computational modelling of protein and RNA 3D structures, discovery and characterization of enzymes involved in RNA metabolism, and engineering of proteins with new functions. He is the author of more than 300 publications. Being active in the area of science and policy, Janusz Bujnicki has been involved in various scientific organizations and bodies, including the SAM Group of Chief Scientific Advisors.

**Science-for-policy and policy-for-science advice:
National and European perspective**

There are different models of successful science advice. One of them is based on science brokers who interact both with the scientific community and with policy-makers. An essential element of this model is a mechanism that allows the advisor to understand and address the needs of the advisee, and to provide advice that is timely, based on the most comprehensive and best possible scientific evidence and in a form that makes it practically useful to the advisee. The presentation will focus on examples of advice to the Polish government and to the European Commission with the participation of academies of sciences.

Founding Member, Academy of Sciences of Nicaragua



Jorge A. Huete-Pérez is the senior vice president of the University of Central America (UCA, Nicaragua). In 1998 he founded the Molecular Biology Center at the UCA, the first molecular biology research and training laboratory in Nicaragua. Dr Huete-Pérez was a postdoctoral fellow at Harvard University (2001), and a research fellow at the Sandler Molecular Parasitology Center of the University of California San Francisco (2004). In 2009 Dr Huete-Pérez became the founding president of the Academy of Sciences of Nicaragua, serving two terms.

Successful scientific advising for the proposed Interoceanic Canal in Nicaragua. The role played by local and international scientific organizations

Scientific advising on the planned Interoceanic Canal through Nicaragua alerted the Nicaraguan government and population to numerous negative ramifications of the canal's structural design and construction methodology. Over the course of 2014 through 2016, the international scientific community reported serious concerns over the environmental and socio-economic impact of the proposed canal. A panel of scientists invited by the Academy of Sciences of Nicaragua recommended a robust and independent scientific examination of the canal project.

The presentation will outline lessons learned, review challenges and opportunities for scientific advice in countries where political environments are rather hostile to scientists and scientific organizations. We will also address feasible options for improving the impact of scientific advisory institutions.

PRESENTATIONS OF BEST PRACTICE



**Research Advisor for Health Policy,
Estonian Ministry of Social Affairs**

Angela Ivask obtained her PhD in Gene Technology from Tallinn University of Technology. She has worked as a post-doctoral fellow at the University of California, Los Angeles, as a researcher at the University of South Australia and as a researcher and senior researcher at the National Institute of Chemical Physics and Biophysics in Tallinn. Her research interests include environmental microbiology, environmental toxicology, in vitro toxicology, antimicrobial coatings and biomedicine. Since April 2018, she works as the research advisor for health policy in the Estonian Ministry of Social Affairs.

The role of research advisors using science for policy-making: Experience of the Estonian Ministry of Social Affairs

The network of research advisors in Estonian ministries is financed and coordinated by Estonian Research Council with the major aim to increase the ability of ministries to integrate science into the process of policy-making. Research advisors are expected to identify areas that need scientific interventions and coordinate collaboration between the ministries and researchers in these selected areas. The latter is often a challenging task due to the lack of time and, frequently, interest of researchers towards policy-making, but also due to preconceptions of officials towards science.



**Head of Research, Foresight Centre,
Parliament of Estonia**

Meelis Kitsing is a professor at Estonian Business School and also serves as the president of Estonian Economic Association. He has conducted research and taught at various universities in Europe and in the United States. He has been an advisor at the Strategy Unit of the Estonian Government Office and head of economic analysis at the Estonian Ministry of Economic Affairs and Communications. Meelis Kitsing obtained his PhD from the University of Massachusetts, Amherst (US), and his master's degrees from the Fletcher School at Tufts University (US) and London School of Economics (UK).

Bridging science and policy: The role of strategic foresight in Estonia

Strategic foresight has gained considerable currency during the last decades. In particular, foresight in policy-making implies involvement of considerable number of external stakeholders who have heterogeneous understanding of the role of strategic foresight.

This presentation explores the role of foresight on the basis of recent work performed by the Foresight Centre in Estonia. The challenges in domestic policy-making as well as in the development of policy scenarios in collaboration with various European think-tanks will be discussed together with some options for involvement of strategic foresight in policy-making.

Tallinn University of Technology

James Cook University



Kevin Parnell, PhD (James Cook University) was a university academic in New Zealand and Australia from 2003–2016. From 2016–2018 he was the coordinator of beaches for Gold Coast City, Australia. He is now working in Estonia funded by a Mobilitas+ ‘top researcher’ grant. He has an extensive track record of international cooperation in the USA, the UK, Estonia, Italy, Vietnam, Indonesia and the Maldives. He has particular expertise in empirical coastal science and the communication of coastal science to community and political leaders.

Turning science into successful projects: political and community dimensions

It is well understood that many decisions on funding and implementing publically funded projects at both national and local levels are made in the context of political cycles (typically 3 to 5 years), and that projects receiving wide community support are the most likely to be provided funding. Using examples from coastal and environmental science, approaches to ‘selling’ science to communities and politicians are discussed, so that excellent science can result in the funding of projects for community and environmental benefit.



**Director, Economic Development
Department, Ministry of Economic
Affairs and Communications**

MR KAUPPO REEDE

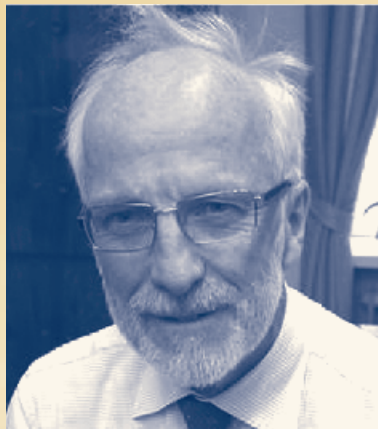
Kaupo Reede is the director of the Economic Development Department at the Estonian Ministry of Economic Affairs and Communications. Within the department, there is a specialised unit of innovation policy with a primary focus on increasing the research and development and innovation capacity and intensity of Estonian companies. He is a member of the supervisory boards of Estonian Research Council and Foundation Innove, an education competence centre that coordinates and promotes general and vocational education in Estonia.

What has been done in Estonia to turn science and research into valuable advice of most practical nature?

Ever since 2014, the Estonian Ministry of Economic Affairs and Communications together with private companies and universities has invested over 175M euros into six technology competence centres. The centres serve as good examples of collaboration between the academia, industry, and the public sector in strategically important areas. Their aim is to increase entrepreneurs' international competitiveness by bridging the gap between scientific and economic innovation. The above-mentioned aims are met through the provision of a collective environment for academic, industry, and other innovation-related stakeholders. Up to now, those have been the key bridge of high tech, business focussed knowledge spill-over from academia to industry, turning high-quality science and research into valuable advice of most practical nature.

PANEL DISCUSSION

**Finnish Academy of Science
and Letters**



Chancellor Kari Raivio graduated from the Faculty of Medicine of the University of Helsinki, and got his PhD in 1969, being specialized in pediatrics and perinatal medicine. In 1996 he was elected the rector (president) of the University of Helsinki, and after seven years as the rector he became the chancellor of the University of Helsinki for five years. Dr Raivio has over 250 clinical and basic science publications on newborn and premature infants, purine metabolism and oxygen free radicals. He has actively participated in public discussion about science and higher education in Finland, and at the request of the Prime Minister's Office submitted a proposal, addressing the issue of how evidence-based policies and government science advice should be implemented. In the academic community, Dr Raivio has served as the chair of the League of European Research Universities (LERU), president of the Finnish Academy of Science and Letters, and vice president of the International Science Council.

Food for thought

What are the requirements for good advice? Who should be the key recipients of the advice in public sector? What are the key issues related to supply and demand for scientific advice?



University of Tartu

Urmas Varblane is a professor of international business of the University of Tartu and the head of the Division of Humanities and Social Sciences of the Estonian Academy of Sciences. His research interests include the role of foreign direct investments in the knowledge transfer, internationalisation of firms, innovation systems of small countries, university industry cooperation. He has often consulted Estonian government, but also international organisations in various policy advice projects. Prof Varblane is a member of the Supervisory Board of Eesti Pank (Estonian Central Bank) and a member of the Estonian Fiscal Council.

Food for thought

Many lessons were learned from the Research and Innovation Policy Monitoring Programme (TIPS) funded by the Estonian Ministry of Education and Research. This programme was aimed at providing high-quality input for policy-making and strategic development of Estonian Research and Development (R&D) and Innovation policy. The project provided crucial input into the design of the new Estonian research, development and innovation strategy for 2014–2020. It initiated a discussion in Estonian society about the role of R&D and its funding. The recommendations were used to introduce the new system of research funding.

**Programme Manager, Estonian
Research Council**

Liina Eek has studied biology and ecophysiology (PhD in 2002) and theology (PhD in 2017) at the University of Tartu. Previously she has worked in the Estonian Ministry of the Environment and at the biosafety team of the United Nations Environment Programme in Geneva. Currently she works at the Estonian Research Council as the manager for National Programme for Addressing Socio-Economic Challenges through research and development (R&D) (RITA) and *inter alia* coordinates the work of scientific advisors of Estonian ministries.

Food for thought

The RITA programme finances a novel activity in Estonia – the positions of scientific advisors, aiming at improving the ministries' capabilities on R&D issues. So far, 12 positions at 10 ministries have been created. The vast majority of the advisors hold a PhD degree and have practical experience in academic work. Their role is to coordinate R&D at their respective ministries and to cooperate with scientific advisors from other ministries. Also, they coordinate and organise scientific advice that is needed in their ministries and manage the cooperation with academia and scientists, as well as at international level.



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Food for thought

How to gain community and political support for publically funded projects using political cycles? How to use community ‘project champions’ effectively, particularly in small, politically less relevant communities? The role of scientific peak-bodies and other organisations are addressed by the example of the Wentworth Group of Concerned Scientists, Australia.



**Head, Scientific Advice
Mechanism Unit (SAM),
European Commission**

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SESSION 3

TRANSFERRING THE ADVICE INTO MOMENTUM

CHAired BY PROF MART SAARMA

Decision-makers are under pressure from many sides: facts are uncertain, values in question, stakes are high and decisions must be urgent. These imperatives drive the requests for high-quality advice that can be used in decision-making. Which format of advice is usable? How rapid/operational must it be? How do we distinguish between lobbying and advice? Who has the final responsibility?

Open Access Envoy, European Commission



Robert-Jan Smits was the director-general of Research and Innovation (RTD) at the European Commission from 2010 to 2018, responsible for defining and implementing the EU policy and programmes in the field of research and innovation. He has degrees from Utrecht University in the Netherlands, Institut Universitaire d'Hautes Etudes Internationales in Switzerland and Fletcher School of Law and Diplomacy in the United States of America. Based at the European Political Strategy Centre (EPSC) of the European Commission, Robert-Jan Smits has the mandate to propose concrete policy recommendations to ensure that by 2020 all publicly funded scientific publications are available in Open Access.

Where does Europe sit in the world in terms of science and innovation?

“Our continent, with 7% of the world population, still produces one third of the world’s knowledge. I find this really amazing. But if you look at what’s going on in the Far East, we cannot afford being complacent. During the last decade, China has increased its spending on research by 22% per year, and last year China even surpassed Europe in terms of investment in science and innovation. /.../ China wants to build a knowledge economy and be the world leader in all new technologies, whether that is artificial intelligence, automated driving, in aeronautics or in plant-breeding technology. That could be really at the detriment of Europe if we’re not careful.” (*Open access to scientific publications must become a reality by 2020; Interview by Joanna Roberts; HORIZON The EU Research & Innovation Magazine; 23 March 2018*)



**Institute of Social Studies,
University of Tartu**

PROF MARJU LAURISTIN

Marju Lauristin is a professor of social communication. Her main research areas are post-communist transformation and the emerging digital society in Europe. Professor Lauristin has also been active in Estonian and European politics. She has been a member of the Parliament of Estonia and minister of social affairs. In 2014–2017 she was a member of the European Parliament where she was appointed a rapporteur on *e*-privacy regulation.

Academic versus political interest?

In my presentation I use my experience as a researcher and also as a legislator. I shall focus on the concepts of academic interest versus political interest and on different cognitive perspectives in the communication between academics and politicians, creating conflict in their understanding of the role of scientific expertise.



REFLECTIONS



Chancellor of Justice

PROF ÜLLE MADISE

Prof Ülle Madise has served as the Chancellor of Justice of Estonia since 2015. During her two decades in public service she has held the positions of the head of a department at the Ministry of Justice (1998–2002), head of the secretariat at the parliamentary constitutional committee (2002–2005), director of audit at National Audit Office (2005–2008) and legal adviser to the President of the Republic of Estonia (2009–2015). Ülle Madise also works as a professor of constitutional law at the University of Tartu (since 2011) and has been the editor-in-chief of the Commentary to the Constitution of the Republic of Estonia (2012, 2017).

The age of innocence: A public call for scientists and politicians to become communicators and educators

Time has come for scientists and political elite to stop lecturing from their intellectual ivory towers, their labs and party headquarters and start communicating with general public. The result is neither pseudoscience nor populism, although there is and will be no shortage of charlatans and populists. In order to defend the facts, logic and clear reasoning, it is necessary to stick to clear message, to the language which the general public shares and understands. For every scientist and politician who declares the issue or problem to be “too complex”, there will always be several populists who have simple solutions to all our ills and troubles.

Director, Estonian National Museum

Alar Karis has worked at several universities in Germany, the United Kingdom and the Netherlands. As a scientist his focus has been on molecular genetics and developmental biology. In 1999 Alar Karis became a professor at the University of Tartu. As the rector of the Estonian University of Life Sciences (2003–2007) and rector of the University of Tartu (2007–2012), he carried out several reforms in order to internationalize higher education in Estonia and broaden the horizons of both teaching and learning. Until his appointment as Auditor General of the Republic of Estonia (2013–2018) he was the president of the Estonian Rectors Conference. Since 2018, Alar Karis is the director of the Estonian National Museum.

The coming of the caravan of fools. Keep barking?

Science is a way of thinking that provides us with facts. What we do with those facts is deeply political. Yet, scientific evidence is often willfully disregarded by policy-makers worldwide. Politicians consequently tend to resort to shortcuts, relying on just one piece of research, a single expert's advice, or using a survey where much of the data is wrong or irrelevant, although seeming convincing. Are we to see a shift in the way that politicians use or misuse scientific expertise? Are scientists running with the caravan of fools or, alternatively, can a scientist with an informed perspective of the scientific knowledge contribute to enhanced understanding in the wider community?

CLOSING DISCUSSION



**Institute of Biotechnology, HiLIFE,
University of Helsinki**

Mart Saarma is a professor of biotechnology and the head of the laboratory at the Institute of Biotechnology, HiLIFE at the University of Helsinki. He was the vice president of the European Research Council in 2015–2016 and a member of the European Molecular Biology Organisation (EMBO) Council in 2011–2016. He is a member of several academies, including the Estonian Academy of Sciences and Academia Europea. His group has characterised several new glial cell-derived neurotrophic factor (GDNF) family receptors, discovered a new neurotrophic factor CDNF that currently is in Phase I-II clinical trials on Parkinson's disease patients.

Food for thought

How to assess the quality of scientific research? How to communicate scientific achievements to wide audience? What instruments are needed to advise governments and funding agencies? Why have scientists failed in communicating results about GMO plants, gene editing and stem cells?

PROF MART SAARMA (FACILITATOR)



Vice President, European Commission 2004–2014

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<https://commons.wikimedia.org/w/index.php?curid=29205777>



Siim Kallas is an Estonian politician, who most recently served as the European Commissioner for Transport between 2010 and 2014. Before that he was the European Commissioner for Administrative Affairs, Audit and Anti-Fraud between 2004 and 2009. Siim Kallas has been the prime minister of Estonia, minister of finance, minister of foreign affairs, a member of the Supreme Council of the Soviet Union and member of the *Riigikogu*. In October 2017, he started as the municipal mayor of Viimsi.

Food for thought: Politics and science - how to construct a bridge over troubled water?

“What the government needs is, above all, reliable scientific analysis about the processes taking place in the society, in order to make competent decisions and avoid the insensible ones that clearly contradict the spontaneous processes the society is undergoing. It is also important for finding adequate and efficient means for influencing the processes.” (2002; *cited from materials of the conference “How science protects Estonia” 10 Oct 2018 at the Riigikogu*)



German Ambassador to Estonia

HE MR CHRISTOPH EICHHORN

HE Mr Christoph Eichhorn began his career as a freelance radio journalist in the joint organisation of Germany's regional public-service broadcasters ARD. He has served as a diplomat in Washington DC and Moscow and as a counsellor for European Union in Brussels. He has also worked as the office director for USA and Canada in the German Foreign Office at Berlin and has been a member of the Disarmament and Arms Control Committee. He studied history, political science and law at the universities of Bonn, Berlin, London and Brussels. Christoph Eichhorn holds degrees of Master of Science from the London School of Economics and Master of Laws from the University of Brussels.

Food for thought

In modern, open, liberal, democratic societies, self-referential information bubbles must be broken up. Reasoned, fact-based dialogue and advice are essential. Politicians and government institutions can only profit from constant, intensive and open exchange with academia and think-tanks. The same is true for scholars and researchers. Their findings and schools of thought achieve extra value if they avoid the ivory tower phenomenon and advance society at large. This requires an open mind and active engagement of everybody involved alongside with the financial resources.

**Member of the Board, Foundation
Archimedes**

Hanno Tomberg is a former business journalist and has been working at different media organisations ranging from public broadcasting to commercial TV stations. He has also been the head of content at the Baltic countries' biggest media house *Eesti Meedia*. Hanno Tomberg is currently employed as the member of the board at Foundation Archimedes, which is responsible for implementing Erasmus+ and other structural funds programmes in higher education. One of the grants provided by Archimedes helps businesses do applied research in cooperation with Estonian universities.

Food for thought

How to get your message through is one of the most difficult tasks faced by modern media. There is an abundance of media outlets and numerous social media sites, but how to preserve trustworthiness in the age of commercially supported news and fake stories is the question lots of researchers have to tackle. Latest developments in Europe, where the European Commission tries to constrain the publications where the research results can be published, does not make the task easier. The question is also what to do with the research in IT and artificial intelligence, which does not overstep the borders of established basic research journals. The next couple of years will definitely broaden the number of outlets where science articles will be published.



**Strategy Director, Government
Office of Estonia**

MR HENRY KATTAGO

Henry Kattago runs the work of the Strategy Unit, which supports the planning of work of the Government and coordinates the preparation and implementation of the Government's action plan, as well as strategic development plans. He advises and supports the prime minister in directing the work of the Research and Development Council since 2011 and Government's Economic Development Committee since 2017. He has been a long-term member of the Estonian research and development Policy Committee, the head of the Enterprise Division in the Ministry of Economic Affairs and Communications, Estonian delegate in the European Union Task Force on Investments as well as a member in several committees in the OECD and European Union institutions.

Food for thought

The quality of government decisions could always be better. The question is how to make knowledge-based decisions within a limited time frame? Life becomes faster every day and a lot of data lies around us. We need to learn how to benefit from the new technology-based tools and make better use of the data in decision-making processes. Science should play a role in interpretation of the data and try to be more responsive to the needs of the decision-making hurry.

The Estonian Academy of Sciences is celebrating its 80th anniversary in the same year (2018) the Republic of Estonia turns 100. With people, birthdays are generally easy to define, but ages not necessarily so. For a state or an institution, determination of the birthday can be a complicated issue.

The need for an academy was debated in Estonia from the time independence was won in 1918. Action only followed twenty years later. It took nearly nine months to move from the decision to the actual creation of the Academy. The process started on Friday, 28 January 1938, when President-Regent Konstantin Päts, referring to “urgent national need”, signed Decision no. 35 of the Estonian Academy of Sciences Act. The law entered into force upon its publication in the *Riigi Teataja* (State Gazette) the following week, on 2 February 1938. That made 31 January 2018 an excellent date to commemorate the Academy’s founding with a festive meeting in the conference hall of the *Riigikogu* (Parliament of Estonia).

The original members of the Estonian Academy of Sciences were nominated, following a proposal by the Minister of Education, by the decision of the President-Regent two and a half months later, on 13 April. On 20 April 1938, the very first general assembly took place at the Council Hall of the University of Tartu. The Academy held a celebratory general assembly meeting and a conference on 20 April 2018 at the Estonian National Museum.

The essential tasks of the Academy are still the same: “fostering science in general and as it pertains to Estonia in particular, driven by questions arising from real-life needs”. Importantly, the task of advising the state has been added.

The actual work commenced with a general meeting in Tallinn, at the premises of the Estonian Chamber of Commerce and Industry on 22 October 1938, with the President Regent attending. We commemorate this date with an international conference, “Advisory role of academies in the information-rich society”, on 22–23 October 2018.