





## **Mission of the SAS**

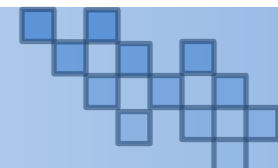
### **Research in natural, engineering, medical and social sciences and humanities**

cutting edge research, specific demanding on personnel/research infrastructure, innovative technologies and diagnostics

### **Global challenges and their impact on Slovakia**

environment, social challenges, health, quality of life, ...

### **Research related to our country, history, language, cultural heritage, etc.**

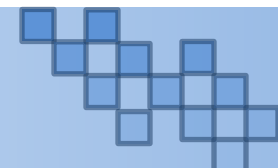




## **SAS and the society**

- participation on the actual problems of the society, economy, ...**
- training of experts**
- teaching**
- development of national and cultural identity**
- effective transfer of knowledge**

**SAS represents SR in selected international organizations  
EASAC, ESF, ALLEA, ...**





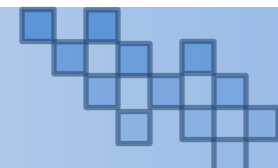
## **Structure of the SAS (2016)**

**Physical, Earth&Space and Engineering Sciences 14 institutes**

**Life, Chemical, Medical, and Environmental Sciences 19 institutes**

**Social Sciences and Humanities, Art and Culture 18 institutes**

**Institutes are independent legal entities**







# Management

## **Assembly of the SAS**

Supreme self-governing body of the SAS

each research institute is represented by 1 deputy elected at the Institute

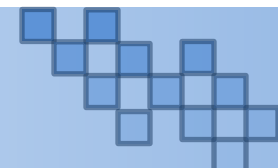
## **Presidium of the SAS**

Executive self governing body of the SAS

15 members proposed by the Institutes and elected by the Assembly

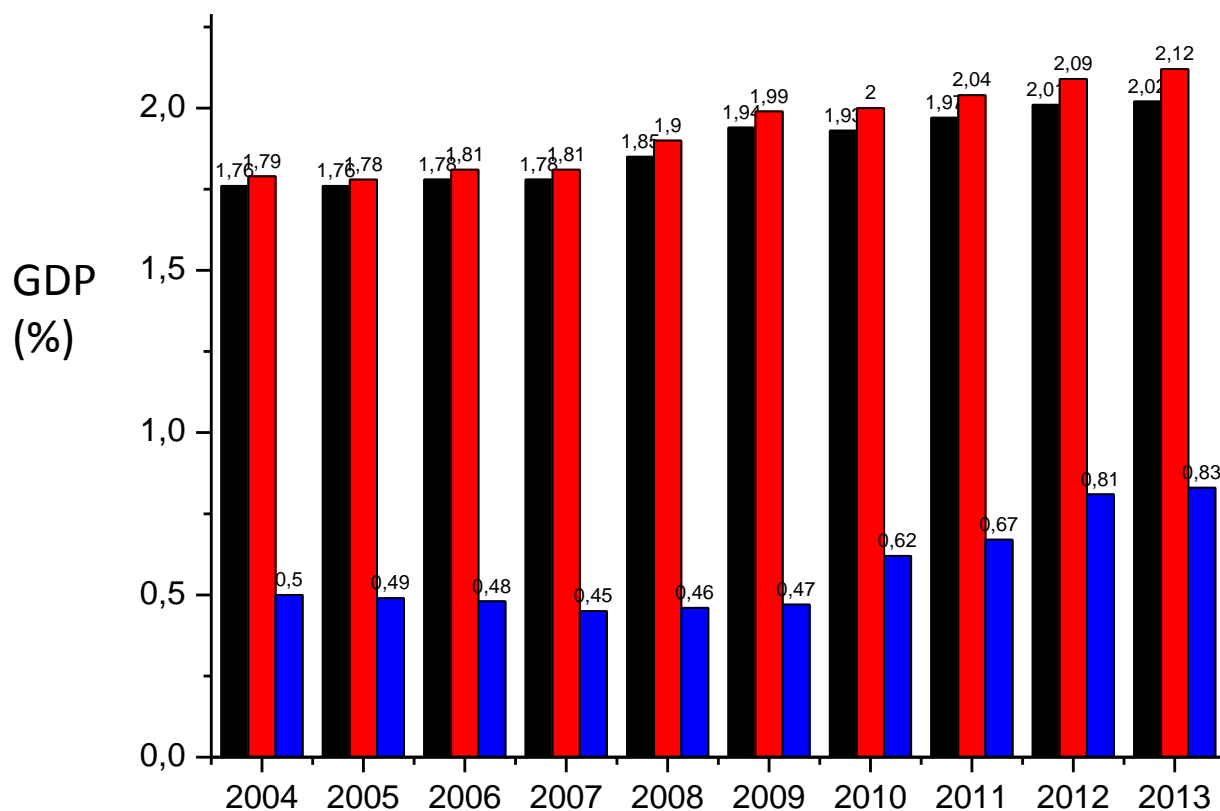
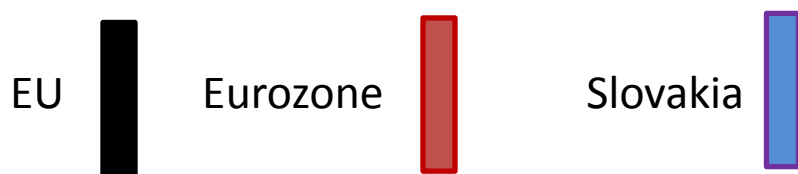
## **Scientific Board of the SAS**

15 members of the PSAS ex offio, representatives of universities, industry, .





# R&D expenditure in Slovak Republic



**Slovakia**  
**2014 – 0.89% GDP**

Source: Eurostat



## Basic facts

**1900 researchers (PhD, D.Sc. Doctor of science)**

**500 - 600 PhD students**

**Total ~ 2900 employees**

**SAS -**

- ~11 % of research potential of SR**
- ~ 31 % of publications (WOS) of SR**
- ~ 39 % of citations (SCI) of SR**

**1300 publications (WOS)/year**

**23 000 citations/year**

**150 monographs/year**

Source: Web of Knowledge



*Slovak Academy of Sciences*  
...science for the future

## Universities and colleges

According to the act there are universities: the state (3), public (20) and private (13).

**Public universities** are financed from the state budget of approximately EUR 440 million (2013). This amount includes expenses to cover the cost of education, the needs for research (institutional research funding), the social scholarships, housing allowances for students and support sports and cultural activities. Public universities are self-governing organizations legally divided into faculties. The faculty has the strong position in determining the curriculum, conditions of admission of students to study but also in economic or personnel area. This makes it difficult to manage the entire organization as the approval by a majority of representatives in the Academic Senate of the school is necessary for the important decisions.

The five largest schools provides the vast majority of research performance and most educational performance.

There are **Comenius University Bratislava, Slovak University of Technology Bratislava, Technical University of Kosice, Pavol Jozef Safarik University in Kosice, University of Zilina in Zilina**



## **Sectoral research organizations**

**The Ministry of Agriculture and Rural Development** (hereinafter “MPRV SR”) is the founder of 6 subsidized organizations (research institutes and research centers). In 2012, 810 employees (including 345 scientists and R&D) were working in research institutes and centers of the MPRV Slovak Republic.

**The Ministry of Environment** is the founder of these research institutions:

- Slovak Hydrometeorological Institute, Research Institute of Water Management , State Geological Institute of Dionýz Štúr

**The Ministry of Culture** is the founder of:

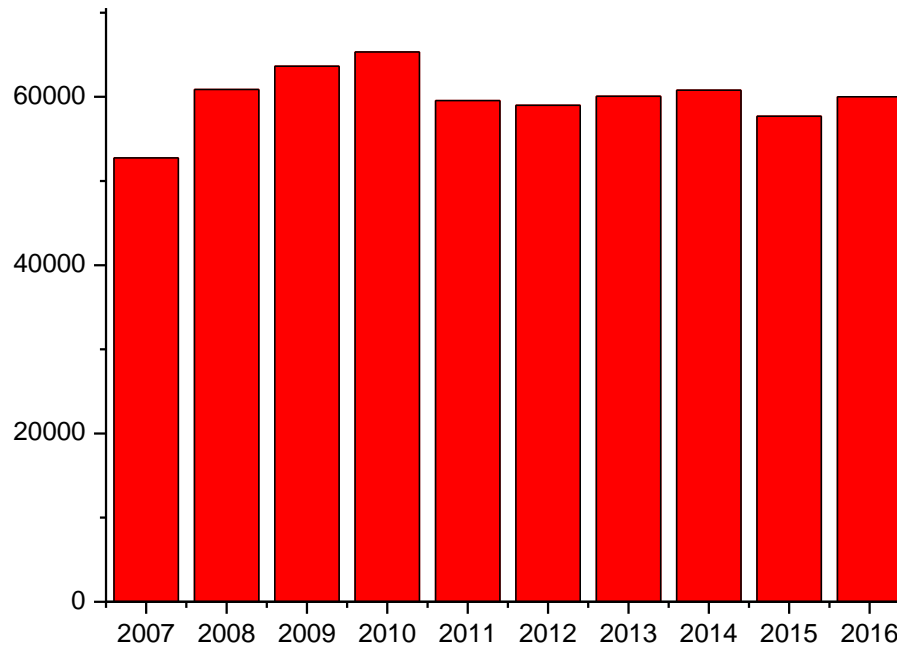
- Theatre Institute, Slovak Monument Board, Slovak National Gallery, Slovak National Library , Slovak Center of Design, Slovak Film Institute,

**The Ministry of Health:** University Hospitals...



# Funding

## Institutional funding – state budget



In 2015 signed agreement of minimum SAS budget 60 mil EUR/year for 3 years



## Research projects

**Grant Agency of the Ministry of Education and SAS**

**SAS 4.6 mil EUR /year**

**Slovak Research and Development Agency**

**SAS 7.800 mil EUR/per call**

**Research Agency (projects supported from structural funds of EU)**

**SAS 300 mil EUR 2009-2015**

## International projects

**supported by the EU**

**FP7, Horizon2020, ERA/Net- Cofund scheme, other**

**supported by the SAS**

**ERA-net programmes**

**collaboration agreements Taiwan, JST, TUBITAK**

**Absence of functional scheme in Slovakia**



*Slovak Academy of Sciences*  
*...science for the future*

## **SAS national projects**

SAS research teams can apply for projects within the following national grant schemes:

**a) VEGA** –Scientific Grant Agency of the Ministry of Education, Science, Research and Sport SR (MŠVVaŠ SR), which provides a common, coordinated approach when selecting and assessing projects for basic research at institutes, universities and scientific institutions of SAS. Currently VEGA is a stable system which has been operating without interruption since 1995. The budget for VEGA research teams from SAS was € 4 516 769 for the year 2015.

**b) APVV (SRDA) Slovak Research and development Agency** is a national grant agency that supports projects in the framework of general calls and specific APVV programs; research teams from SAS acquire projects under the general APVV call on average of EUR 7.800m per call.

**c) VA (RA) Research agency** is focused on the implementation of the Operational Research and Development Programme

**d) SAS** – within its own budget, SAS supports the participation of research collectives in selected ERA-net schemes and in particular in international cooperation schemes such as MOS Taiwan, V4 cooperation, JST etc.

**e) SAS projects** supporting cutting edge research

### **SAS HORIZON2020 project CIMULACT**

In the field of science with society and science for society, SAS acquired a project called Horizon 2020 CIMULACT (Citizen and Multi-Actor Consultation on Horizon 2020) in 2015. The main objective of the project is to contribute to increasing the significance and scope of scientific policy at both the European and national level. CIMULACT includes actors in 28 EU countries, Norway and Switzerland.



## **ERA-NET Projects**

The ERA-NET programme is a specific EU instrument for the coordination of national research programs through national agencies to support science and research. The program has two phases: the first is to create a consortium of agencies that support research that proposes coordinating projects. Once projects are approved by the European Commission the consortia can then launch a call for research projects (second phase). While the consortium activity is supported by EU funds, project research is covered by the agencies from their own resources. The ERA-NET program is set to continue under H2020.

**In 2015 SAS was a member of several consortia (17) and actively participated in the preparation of several coordination projects and their administration**

**In 2015, SAS organizations were involved in the nine ERA-NET research projects with total support in the amount of € 203,291**

SAS is gradually broadening its participation in ERA-NET consortia to enable the participation of teams from a wider range of disciplines from all scientific fields. As the cost of handling research projects is covered by SAS from its own budget, further increasing the participation of SAS in the ERA-NET will depend on obtaining additional resources. Note: SAS is the only institution in Slovakia active in ERA programmes.



## Human resources

### Stefan Schwarz Fellowship

**for post-docs since 2004**

**up to 20 post-doc positions per year**

### SAS Scholarship Program

**for young researchers since 2013**

*attracting researchers from abroad*

### SASPRO Marie Curie COFUND programme (2014)

**positions for 54 Slovak and foreign researchers**



*Slovak Academy of Sciences*  
*...science for the future*

## SAS Scholarship

As part of the objective of promoting excellent science and cutting-edge research at SAS, we implemented the first call for the SAS Scholarship in 2013. The SAS scholarship program, approved in 2012 by the SAS Presidium, aims to bring excellent foreign researchers up to the age of 40 years who are currently working abroad in the field of science and research to SAS workplaces. The goal is to reinforce SAS workplaces with people with experience at leading foreign research institutions which will contribute to the development of Slovak science in the national and international context.

In the first call in the program 11 applicants were enrolled, of which three were recommended for funding based on the opinions and discussions of assessment committees.

The SAS Presidium approved funding for 4-year placements for incoming researchers. **The project is currently on hold due to the fact that SAS won the 2013 Marie Curie project COFUND which has a similar focus**

## SASPRO

The SAS received the SASPRO program in 2013 as part of the 7th EU Framework Programme - Marie Curie Actions - People scheme.

This project aims to attract researchers from abroad and motivate them to create conditions for work at SAS organizations. Equally important is the effort to enable Slovak scientists to return from abroad. SASPRO focuses on the mobility of scientists responding to the problem of brain drain while trying to attract top scientists from prestigious world workplaces. The COFUND scheme has the financial means to create and implement projects jointly paid by means of SAS and the European Commission at a ratio of 60: 40. The budget for the operation of the five-year program is a maximum of EUR 7.8 million.

After the first call which was completed in December 2014, the Presidium of SAS accepted 19 grantees. In the second call which concluded in July 2015, we accepted 8 candidates and in the third and final call we approved 13 candidates. For all three calls 40 scientists (from 138 submitted projects) were accepted altogether, 16 of whom were scientists from the Slovak Republic, 24 originating from other countries (Hungary, Poland, Austria, Germany, Romania, Serbia, Norway, Finland, India Ukraine, Croatia, Spain, Greece, the Netherlands and Brazil). The average duration of a project is 34 months. All projects must be completed by 31.12.2018.



# Scientific priorities

Advanced materials and (nano)technologies  
Information and communication technologies  
Industrial technologies  
Energy and renewable energy resources

Biomedicine and biotechnologies  
Environment, quality of food, agriculture

Social challenges



**Excellent science** - frontier research in all fields  
of science



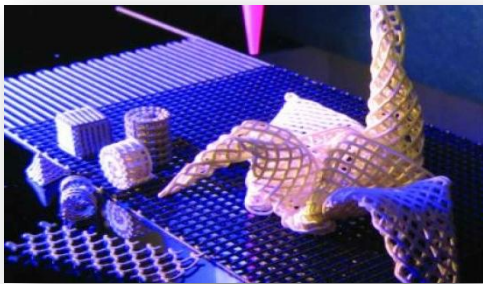


## Research programmes (under discussion)

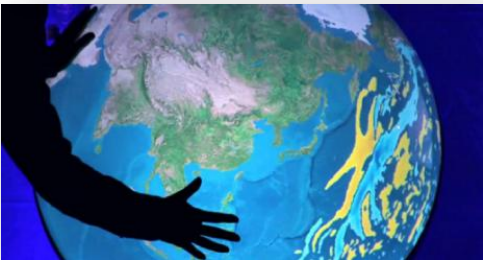
- SAS – a non-university research body
- focusing of research topics
- addressing the problems of the society



# Section 1



**New materials for all**



**Between Earth and Space**



**Information and communication**



# Section 2



**Sound country of the 21 century**



**Sound food for all**



**Science for quality life**





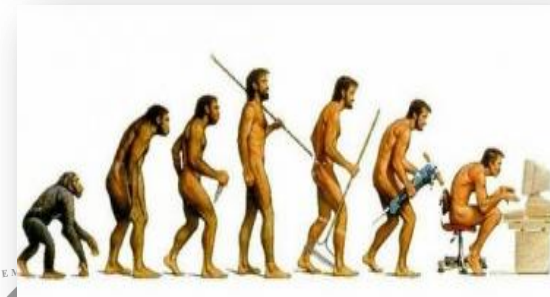
# Section 3



**Problem of the social system**



**Problem of a man in 21 century**



**Problem of the cultural change**

## **Big projects**

- University scientific park for biomedicine Bratislava**
- Center for applied research of new materials and technology transfer Bratislava**
- Material research center PROMATECH Košice**
- R&D Center for immunologic active agents, Šarišské Michaľany**
- Research Center Allegro, Trnava**

**National project – infrastructure for high performance computing  
(2 supercomputers a 6 computing clusters in grid scheme)  
for all researchers in Slovakia**

**23 projects of R&D projects - project leader from industry project and projects of other calls**

**Several world competitive laboratories installed**





- translational and clinical research**
- molecular diagnostics and personalized medical cancer treatment**
- cardio-vascular and brain diseases**
- endocrinology, metabolic and infectious diseases**

# **Center for Applied Research of New Materials and Technology Transfer Bratislava**



- new smart oxide and non-oxide ceramic materials**
- materials for electrical engineering**
- metallic materials -new alloys for high temperature**
- applications metastable metallic materials**
- nanomaterials and nanocomposites**
- polymers and polymeric nanocomposites,**
- materials testing and smart material diagnostics**



- development and testing new materials and devices under extreme conditions (ultralow temperatures, high magnetic fields, high pressures),**
- powder and steel metallurgy**
- ceramic and composite coatings for heavy duty conditions**
- materials for biomedical and environmental applications**

## **Projekt Teaming**

**H2020-WIDESPREAD-2014-1-FPA**

**CEMEA Building-up Centre of Excellence for advanced materials application**

Goal-

creation of new centres of excellence or upgrading the existing ones in low R&I performing countries, building on partnerships between leading scientific institutions and partner institutions in low R&I performing countries, that display the willingness to engage together on this purpose

**2-stage process**

**SAS(BA)– VTT (Technical Research Center)  
UNI-Helsinki**

- 1. Stage – score 14.5, second position among 150 applicants**
- 2. Stage (late spring 2016)**

**Funding up to 15 mil eur EC and similar support by the government**

## Vision of the SAS

- **strengthen the position of the SAS as an excellent national non-university public research institution which performs top-level research in selected areas ,**
- **SAS will form a stable and promising basis for the economic and cultural development of Slovakia**
- **SAS will be an institution open to new challenges and new issues in science and research**



# State of the art

- SAS can be evaluated as being the best among Slovak institutions
- SAS position among the Visegrad Group nations and in the Central and Eastern European region in general is less than satisfactory.
- Scimago Institutions Rankings - Slovakia is lagging behind Hungary and the Czech Republic primarily in terms of the excellence parameters

*Among other things, this is the result of the significantly inadequate financing of science and research in Slovakia from state sources.*

**Thank you for your attention**

