



# **WORLD SCIENCE FORUM**

**BUDAPEST 2019**  
20-23 November

SCIENCE, ETHICS AND RESPONSIBILITY

## **Preliminary agenda**



**WORLD SCIENCE FORUM**  
BUDAPEST

## **19 NOV / DAY**

### **09:00 - 18:00 / Special session: GYA-IAP LEADERSHIP WORKSHOP PART I.**

Venue: Hungarian Academy of Sciences, Library Conference Hall

### **13:30 - 18:00 / Special session: RESPONSIBLE EDUCATION: A 'CALL FOR ACTION'**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

When it comes to preparations that concern the future of education, it has become abundantly clear that more needs to be done to galvanise educators, policy-makers, students and socio-civic groups into action. The Digital Age is already upon us and we require a lot more tangible action to appropriately position ourselves for the future. We all have a role to play when it comes to ensuring responsible education. This much is true. It is also important that our learning environments always remain supportive, personalised and fit-for-purpose, in order to maintain their overall relevance and value. This session will entail a series of insightful talks and presentations, an engaging workshop and a networking session at the end.

Speakers: Craig V. Johnson, Judit Beke, András Szöllősi-Nagy, Zoltán Dubécz, Phillip Jeffrey Saxon, Helena Kovacs

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## **20 NOV / DAY 1**

### **09:00 - 12:00 / Special session: GYA-IAP LEADERSHIP WORKSHOP PART II.**

Venue: Hungarian Academy of Sciences, Library Conference Hall

### **09:00 - 10:30 / Special session: MCAA FORUM ON RESEARCH AND DEMOCRACY**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

The pursuit of truth and knowledge has helped shape modern human social and political history. Despite hundreds of years of progress towards a society where facts and evidence form the basis of our laws, customs and policies, we continue to face threats from political forces who rely on demagoguery, misinformation, and suppression of scientific findings to erode democratic institutions, consolidate power and secure financial and political supremacy.

Scientists and researchers have always played a crucial role in defending knowledge, and the right to pursue it, in democratic societies. In this forum, we aim to highlight the historical role of research in democratic societies and extract lessons from that history to shape how our community responds to the challenges we face today.

Those challenges include not only the global rise of political threats to democratic values, but also the broader societal challenges best described by the UN Development Agency's Sustainable Development Goals (SDGs). We hope that a wider recognition of SDGs amongst the research community, and the

public at large, can be a catalyst for a stronger role of research and scientific knowledge in policy and politics.

Moderator: Matthew DiFranco

Speakers: Nehama Lewis Persky, Gábor Kismihók, Murat Güneş, Zsolia Buttel, Mostafa Moonir Shawrav

**09:00 - 10:30 / Special session: CIVIC DUTY AND RESPONSIBILITY OF SCIENTISTS**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

## Abstract:

Currently, one emphasis for science is towards professional responsibility within the narrow constraints of the subject including extensive, often technical discussions, on “correct” measurement and reporting standards.

These “internal”, self-reflexive responsibilities are only one aspect. Scientific research goes much further influencing society, informing policy or building the basis for technology that requires a careful cost/benefit analysis. For example, genetic screening can lead to identifying rare diseases but at the same time also raises serious ethical concerns.

Thus, there are inevitably “external” responsibilities to wider society that enables science through public funds in the first place.

This gives rise to the concept of the “civic duty of scientists” who are not just conducting technically accurate research but are also part of society and therefore bear wider societal responsibility for the consequences of their studies. As such, scientists have a civic duty for the scope and impact of their work and cannot simply conduct naïve research without regard for external responsibility. Consequently, outreach and educating the public may become a moral imperative for scientists who, unfortunately, are often not trained for this complex nexus of policymaking, advertisement, and public relations.

In this panel discussion, we look at the intricate interplay of internal and external responsibilities of science and the consequences for the individual scientist along with the following key questions:

1: What is the scope and limitation of external responsibility for scientists?

2: How can scientists stem the tide against post-truth modes of communication? Or to put it provocatively, do scientists need to be trained as actors and in polemics to have a chance to survive in the communication jungle of a post-factual, populist landscape?

3: What is the correct training to ensure scientists are effective in the public arena?

4: How can institutions support and foster a culture of civic duty among scientists?

These abstract notions will be illustrated in the areas of state-of-the-art research in urban health (Prof. Tolullah Oni), sustainable energy production (Prof. Michael Saliba) and climate change (Prof. Diana Ürge-Vorsatz, Coordinating Lead Author in the Nobel Peace Prize-Winning IPCC 2007).

These research areas are widely visible and therefore public outreach, defending the scientific method and refuting irrationality is of particular importance.

The expected results from this panel are to introduce the concept of civic duty of scientists who conduct accurate research but are also part of the larger society. Thus, civic duty of scientists needs to be part of the curriculum from the very beginning. This is true especially for younger scientists.

Moderator: Marion Schulte zu Berge

Speakers: Michael Saliba, Tolullah Oni, Chai Lay Ching, András Báldi

## **09:00 - 10:30 / Special session: EVOLUTION OF SCIENCE COMMUNICATION: LET’S LEARN FROM AFRICAN EXPERIENCE**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

## Abstract:

Science plays a pivotal role in achieving the 2030 Sustainable Development Goals (SDGs) and affects



human life aspect at all levels. Scientists have an ethical obligation to produce factual, intelligible and timely information to empower the populations to make decisions about important social, economic and political issues, especially those related to SDGs. Together with science education, science communication also aims to share with the general public, especially younger ones; the pleasure of discovering how the world works. At every level science must be part of the culture, as well as arts, sports and traditions. In many African countries, the appreciation of science as a tool for development has increased and this is reflected in the current national and regional strategic plans. The science communication space has begun to develop only recently. A space that has experienced changes with the rising new technologies, the ongoing transformation of our communication infrastructures, and changing dynamics of the public's attitudes. The Internet of Things generation is a two-sided coin that has brought in opportunities and challenges. Opportunities such as a wider dissemination of science thanks to improved communications, and proliferation of sources of information. With the world becoming a global village, we face challenges such as rise in pseudoscience. This session will highlight some examples of new initiatives that improve science communication in Kenya and other African regions. Panelist will discuss about the synergies that should be set up and the roles of the different stakeholders such as the governmental authorities, academia and entertainment industry. In order to advance science communication to promote inclusive public engagement and drive innovation through science. Participants of this session will be invited to give their input and share their own experiences from different parts of the world on these matters. They will also be invited to participate in a short exciting science communication action, that they will afterwards be able to propose to their own communities.

Moderator: Luc Joel Allemand

Speakers: Stephanie Okeyo Ajwan'g, Babusa Omar Hamisi, Anthony Leigh Maples, Lea Witmond, Bafedile Kgwadi

### **11:00 - 12:30 / Special session: EÖTVÖS 100: NOVELTIES FROM THE ROLAND EÖTVÖS COMMEMORATIVE YEAR**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

2019 is the 100th anniversary year of the death of Roland Eötvös (in Hungarian Eötvös Loránd, 1848-1919), a pioneer of high precision gravitational physics, founding father of applied geophysics and innovator of higher education. His results are still with us, both in capillarity (before 1880) and in various fields of gravity. The Eötvös rule, Eötvös constant, Eötvös number (all related to surface tension of liquids), as well as several gravity terms: the Eötvös torsion balance, Eötvös experiment, Eötvös parameter, Eötvös tensor, Eötvös effect, and the Eötvös (E) physical unit. Roland Eötvös was President of the Hungarian Academy of Sciences (1889-1905), Rector of the leading Hungarian university (now: Eötvös Loránd University), Minister of Religion and Public Education. He was not only a great scientist (explorer of true and deep relations), he was also a great man: supporter of young talents, sports organizer, sportsman, and stereoscopic photographer. At this Side Event, a cross-section is given from the novelties of the Eötvös 100 Commemorative Year (eotvos100.hu), as follows. (1) His stereographic photos provide an insight not only into his field measurements but also to his mountaineering activity, as well as to the historical Budapest; (2) The conclusions of a recent re-measurement of the celebrated Eötvös experiment (demonstrating the Weak Equivalence Principle with a high precision) are expected

to be interesting for a wider audience; (3) The event ends with a book launch:

Eötvös' most famous work (available until now only in German) has been published in a historical context both in English and in Hungarian.

Participants are encouraged to become actively involved; in exchange, they will receive a free copy of the book. In the Academy building, during the whole World Science Forum two Eötvös 100 exhibitions are on show: a Chamber Exhibition in Scientists' Café and a pop-up-wall in the Gallery.

Co-Moderators: Kathy Whaler, Alik Ismail-Zadeh

Speakers: László Csaba Szarka, Jenő Sólyom, Zsolt Regály, Lajos Völgyesi, Gábor Dávid

### **11:00 - 12:30 / Special session: MERGING VALUES ACROSS SCIENCE AND DIPLOMACY: INTERACTIONS AND COUNTERACTIONS BETWEEN SCIENTISTS AND DIPLOMATS**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

Science diplomacy emerges at the intersection of two worlds and through two main categories of actors: scientists and diplomats. These two groups have different values that may clash or complement each other. A smoothly functioning system of science diplomacy might benefit from mechanisms and systems that prevent clashing and encourage complementarity between scientists and diplomats in practice. Panelists will discuss how we may foster convergence of values between scientists and diplomats, and how historical analysis and present time science diplomacy practices validate, refine or even deconstruct 'business as usual' in both the diplomatic world and the scientific. Panelists may draw on the common language of UNESCO's Recommendation on Science and Scientific Researchers, and examine institutions and practices in science, while considering how efficient, deliberate, and transparent science diplomacy will come into being.

This panel is proposed by the H2020 European project InsSciDE (Inventing a shared science diplomacy for Europe, [www.insscide.eu](http://www.insscide.eu)). InsSciDE aims to create new knowledge on past and present science diplomacy in Europe and reveal and foster Europe's capital of science diplomacy experience. InsSciDE's interdisciplinary group of researchers invites scientists and diplomats to explore what could be the science diplomacy of the European Union and to formulate recommendations for the harmonious division of competencies between the member states and their Union. Themes of historical and critical study include Heritage, Health, Security, Environment, and Space.

Moderator: April Philippa Tash

Speakers: Rasmus Gjedssø Bertelsen, Thierry Courvoisier, Judit Hidasi

### **11:00 - 12:30 / Special session: THE EUROPEAN RESEARCH COUNCIL – FUNDING OPPORTUNITIES FOR BRILLIANT MINDS**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

The European Research Council (ERC) was established by the European Commission in 2007 with the aim of encouraging the highest quality research in Europe. The concept is simple, competitive individual funding for researchers with a great idea, across all fields.

ERC grants are awarded through open competition to projects headed by starting and established researchers, irrespective of their origins, who are working or moving to work in Europe. The sole

criterion of choice is scientific excellence.

The ERC approach allows researchers to identify new opportunities and directions in any field of research, rather than being led by set priorities. This ensures that funds are channelled into new and promising areas of research with a greater degree of flexibility and that scientists are the ones driving the development of their field.

This session will explore all the schemes offered by the European Research Council, with the aim of introducing potential applicants to what could be a life changing opportunity. It will also guide them through the intricacies of the application process, building on a Q&A session to target the discussion to the needs of the audience. In addition, current grantees will provide useful testimonials of what the application and funding process are really like.

Moderator and speaker: Angela Liberatore

Speakers: Agnes-Melinda Kovacs, Jason Reifler

**11:00 - 12:30 / Special session: IMPLEMENTATION OF THE S20 RECOMMENDATIONS: SCIENTIFIC SOLUTION TO KEEP A BALANCE BETWEEN PROMOTION OF INDUSTRIAL SCIENCE AND WARNING FROM ENVIRONMENTAL SCIENCE?**

Venue: Hungarian Academy of Sciences, Press Room

Abstract:

This year, the S20 was held in Japan, featuring the emerging issue of marine plastic waste. As a result, the G20 Academies of Sciences calls for 6 recommendations including use of evidence-based advice, capacity building for both essential research infrastructures and human capital, and establishment of an improved data storage and management system that ensures open access by scientists globally.

To implement these recommendations, there is a growing need for scientists to work multidisciplinary and to promote evidence-based policy toward the SDGs. There is, however, a risk of conflict; scientists from different disciplines have opinions that collide with one another and biased view in public image on particular science hinders the other with different objectives. It is almost unclear what are “known knowns”, “known unknowns” and “unknown unknowns” related to many sustainable development issues, such as SDGs including new problem of plastic waste. The amount of microplastics in the ocean is uncontrollably increasing (known knowns). However, how much amount of microplastics are lethal to marine organisms or human is still unknown (known unknowns). There might be a further potential risk of smaller plastics (nanoplastics) (unknown unknowns). Such recently recognized environmental issues need public awareness and urgent action to protect and preserve natural resources. On the other hand, negative public image on plastics may hinder promotion or development of associated industrial science.

Given the circumstances, the objectives of this session is twofold: 1) to discuss and find ways to keep a good balance between promotion of industrial science and protection of natural resources, utilizing sometimes insufficient evidence in environmental science, and 2) to make balanced science advice to implement the S20 recommendations and to avoid possible conflicts and public confusion in terms of achieving SDGs.

Speakers: Shunsuke Managi, Kazuhiko Takeuchi, Nina Yasuda, Akihiro Kishimura, Michael Saliba, Wibool Piyawattanametha

## **11:00 - 12:30 / Special session: THE ETHICAL CHALLENGES OF A GLOBAL SUSTAINABLE FOOD SYSTEM**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

Abstract:

All countries face the problem of tackling the burden of malnutrition and it is vital to increase efforts to ensure food and nutrition security for all. There are major challenges, but also great collective opportunities, for transformation of food systems to provide healthy, sustainable, diversified diets amidst climate and other environmental change.

A recent global, innovative project organised by the InterAcademy Partnership (IAP) brought together regional academy networks from Africa, Asia, the Americas and Europe for systematic analysis of evidence and perspectives. Academies agreed transboundary goals to explore how better to generate and integrate scientific evidence on both the demand-side and supply-side issues, while also enabling academy capacity-building at the science-policy interfaces. The recently published final report explored various issues for local-regional-global connectivity, for example for improving scientific infrastructure and research collaboration, food system efficiency and resilience, and linkages between food-energy-water-health, all key issues for developing cohesive policy and for tackling multiple Sustainable Development Goals.

This session, organised by IAP and EASAC will review project outputs on the priorities for science, innovation and policy. Our particular objective is to stimulate discussion on the ethical aspects of changing food systems for planetary and human health, including equity of access, problems for vulnerable groups and for intergenerational equity, reduction of waste, environmental sustainability and diversity, and capitalising on advances in science and technology.

Moderator: Volker ter Meulen

Speakers: Robin Fears, Sheryl Hendriks

Panellists: Anet Režek Jambrak, Ervin Balázs

## **11:30 - 12:30 / Special session: ETHICAL CHALLENGES AND GOVERNANCE RESPONSIBILITIES OF DO-IT-YOURSELF BIOLOGY**

Venue: Hungarian Academy of Sciences, Library Small Room

Abstract:

The objective of this panel discussion is to show and confront different points of view on the rapidly growing movement of DIY Biology. Four experts and a moderator will discuss in front of the audience how open science movement of DIY Biology is shaping the economy worldwide and how it can be also applied globally to enhance innovation, entrepreneurship, and economy same ethical and regulatory challenges will be discussed by panelists in order to show both the positive and negative side of this exciting movement. The discussion will stimulate the audience to get immersed in this citizen science movement of DIY Biology and make them familiar with various entrepreneurial opportunities

Do-It-Yourself Biology is a rapidly evolving and emerging social biotechnology movement, in which individuals, community groups, and small organizations study biology and life science using the same or similar methods as traditional research institutions. DIY Biology is primarily undertaken by individuals with extensive research training from academia or biotech and pharmaceutical corporations, who then mentor and supervise novice DIY biologists with little or no formal training. Other terms are also



associated with this new, emerging, and unregulated field. Commonly used terms of biohacking and wetware hacking emphasize the connection to hacker culture and the hacker ethics, while the term biopunk emphasizes the techno-progressive, political, and artistic elements of the movement. The above terms; just like their archetypal counterparts; emphasize the intellectual challenge of creatively overcoming limitations of biological systems to achieve novel and clever outcomes. DIY Biology may be done as a hobby, as a not-for-profit endeavor, an open-science innovation, or a for-profit business. In recent years, maker spaces and community Do-It-Yourself Biology labs have been opening up across the globe, to harness interest in learning and working in non-academic settings. Currently, there are about 160 DIY Biology groups around the globe with nearly 4,000 active participants and some 32,000 followers.

The movement also poses potential bioethics and biosafety threats as such regulatory agencies worldwide are worried that the movement can be used for wrongdoing.

Many of the ideas developed within DIY Bio communities have been translated and commercialized to drive innovation, economic growth, and to address a number of SDGs. Success stories of DIY Biology include startup ideas developed as part of the DIY Biology community which have been turned into profitable multi-million biotechnology ventures. This open science movement attracts more and more enthusiasts each year, but what is the best approach to tapping at the potential of this rapidly growing innovation ecosystem to ensure ethical code of conduct and best governance practices?

Moderator : Alexander Kagansky

Speakers: Wibool Piyawattanametha, Velia Siciliano, Clarissa Jazmin Rios Rojas, Sandra L. Lopez-Verges

## **12:00 - 14:00 / Break: LUNCH**

## **12:30 - 13:00 / Special session: LAUNCH OF THE DECLARATION ON THE CORE VALUES OF YOUNG ACADEMIES**

Venue: Hungarian Academy of Sciences, Kodály Hall

Abstract:

Official launch of the Declaration on the Core Values of Young Academies, a document compiled by representatives of various Young Academies from around the globe, based on discussions held at the Worldwide Meeting of Young Academies in July 2019 in Da Nang, Vietnam.

[Declaration on the Guiding Principles of Young Academies November 2019](#)

*This session is open to the public.*

## **13:00 - 15:30 / Special session: THE RESPONSIBILITY OF WATER SCIENCE FOR SUSTAINABILITY**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

Surface water and groundwater resources of Hungary are exceptionally rich and their conservation is an imperative responsibility for the society. This recognition lead to the development of the National Water

Strategy (Kvassay Jenő Plan), the strategic framework and mid-term action plan of water management to avoid the world-threatening water crisis in Hungary and to preserve water for future generations by integrated and sustainable water management.

The effective implementation of the National Water Strategy requires – among other factors – to significantly develop the scientific background and the optimization of scientific support for sustainable water management. Therefore, the Hungarian Academy of Sciences (MTA), as the coordinator of water science research institutions, launched the National Water Science Programme (NWSP). One of the pillars of the NWSP is the elaboration of a comprehensive Hungarian Water Research Programme (HWRP) to summarize the most important water-related national challenges and research tasks.

The key resources used for the current document were: (i) relevant national strategies and other key studies; (ii) international policies, agreements and examples of national water research programmes from other countries and regions; (iii) status reports and trend analyses of scientific fields written by delegated experts; and (iv) extensive survey research. The draft programme compiled based upon the source documents was evaluated by internationally renowned experts and their proposals were incorporated into the document.

Challenges and research tasks of the document are listed in six priority areas as chapters reflecting the water-related target areas of the #6 Sustainable Development Goal: 1, Safe drinking water; 2, Water quality; 3, Sustainable water use; 4, Water management; 5, Protection and restoration of aquatic ecosystems; 6, Water-related social conflicts.

Each chapter starts with listing the most important keywords related to the priority area and ends with defining the key research tasks which result from the indicated challenges. The themes listed in the six chapters include all key areas defined by the National Water Strategy, focusing on the topics which require further research. Moreover, the document defines several other multidisciplinary research areas such as emerging pollutants (xenobiotics, plastic microparticles and antibiotics resistance), evaporation research or the expansion of invasive foreign species endangering aquatic habitats.

Moderators: László Bozó, Péter Szűcs

Speakers: Lucien Hoffmann, Ján Szolgay, János J. Bogárdi, Helmut Kroiss, Marco Petitta, Csilla Farkas

Rapporteur: Éva Sugár

### **13:00 - 14:00 / Special session: YOUNG SCIENTISTS NETWORKING LUNCH**

Venue: Hungarian Academy of Sciences, Vörösmarty Hall

Abstract:

By special invitation

### **14:00 - 15:30 / Special session: ETHICAL CHALLENGES IN ENGINEERING AND TECHNOLOGY**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

This Workshop will address current issues and ethical challenges arising from the rapid advances in technology. Reporting on major initiatives taken by the IEEE, leading engineers from the IEEE, with their wealth of experience, will share their views and seek answers to current problems ranging from the rise of autonomous vehicles and artificial intelligence to emerging issues related to the development of

standards supporting ethical design.

Headquartered in New York, the IEEE is the world's largest organisation of professional engineers, with over 430,000 members in some 160 countries. The IEEE publishes over 30% of the world's technical archival literature, and annually sponsors over 1600 conferences world-wide. Key strengths of the IEEE include its work on Standards. The IEEE Standards Association (SA) promotes innovation and drives the functionality, capabilities and interoperability of a wide range of products and services that transforms people's lives. IEEE SA has developed over 1000 global standards in a broad range of industries. e.g. most of the technical standards for mobile phones and mobile communications technology belong to the and IEEE.

IEEE SA has established the IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems, with more than 2000 experts from all over the world, covering engineering, law, science, economics, ethics, philosophy, politics, and health.

The Global Initiative has produced comprehensive guidelines on 'Ethically Aligned Design' which is of great relevance to practicing engineers and inspired the launching of a new series of closely related standardization projects.

Through a series of panel presentations, followed by break-out sessions, the Workshop will engage the attendees in exploring the challenges of Ethics in Engineering in the light of emerging developments in technology. The Session will be open to all, with sufficient time for an open discussion and contributions from the floor.

Moderator: Tariq SALIM Durrani

Speaker: Raja Chatila, Alireza Ghazi Hessami, Sohaib Qamar Sheikh

### **14:00 - 15:30 / Special session: AREN'T WE WASTING TIME? CREATING A COOPERATIVE FUNDING FRAMEWORK FOR MORE RESPONSIVE RESEARCH FOR DEVELOPMENT**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

Abstract:

In the twenty years since the "Declaration on Science and the Use of Scientific Knowledge" defined the new responsibilities of science as "science for peace, science for development and science in and for society", we research funders have striven to keep these concepts central to our endeavors in science, technology and innovation (STI). Yet despite all our individual good intentions, can we say we are dealing with the problems that need most attention? As individual funders we continue to focus on our own specific targets often without full awareness or understanding of how our international counterparts are approaching the same issues. If the left hand doesn't know what the right is doing, then we have no way of formulating a coordinated, powerful response to the issues we should really be caring about. We might innovate just for the sake of innovation, with a false sense of accomplishment and progress as the real problems affecting health and security in today's most fragile societies continue to accelerate and evade us.

We need a new approach. A greater level of communication, openness and transparency between north

and south that will make international coordination among research funders both feasible and attractive. We need inclusiveness and fair representation from all corners of the world, with an intention to ask vulnerable societies the right kind of questions and listen to their insights with unbiased ears. In this session we will invite representatives of research funders from Japan (Asia), South Africa (Africa), UK (Europe) and representatives of the global research community to reaffirm what we as active STI 'do-tanks' can do for sustainable development in this century. We will discuss how to break down destructive silos, unite our individual insights and strengths instead of working at cross purposes, and create more comprehensive and ultimately effective solutions to the issues which are too big for anyone of us to tackle alone.

Moderator: Osamu Kobayashi

Speakers: Rocky Noel Samuel Skeef, Mila Kencana, Sarah Plowman, Kyle E. Cordova

### **14:00 - 15:30 / Special session: DECARBONISATION OF TRANSPORT – POLICY OPTIONS AND ETHICAL CHALLENGES**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

Recent analyses have shown that current EU policies are unlikely to deliver greenhouse gas (GHG) emission reductions quickly enough to limit climate warming to less than 2°C". GHG emissions from transport differ between countries, but represent 24% of all GHG emissions from the EU. Road transport makes up nearly three-quarters of this.

This situation implies a number of ethical challenges, on a regional and personal level. Regionally, important GHG emitters such as the EU should make more rapid contributions to emission reductions than regions in the global South. On an individual level, the more vulnerable groups in society should be protected from having to pay for the required changes to transport systems.

The current situation could be turned around by putting 'avoid, shift, and improve' measures into place quickly. Better targeted policies could contain demand for inefficient motorised passenger and freight transport, promote healthy walking and cycling in urban areas, accelerate the phase out of fossil fuels, and increase access to low carbon electricity. Public funding could incentivise low-emission vehicles and fuels, energy infrastructure and high-quality public transport".

International collaboration, new business models and citizen engagement will become more important as falling fossil fuel consumption makes oil and gas prices more volatile.

The panel discussion will focus on the challenges of implementing policies that require personal mobility lifestyle changes by all sectors of society. Freight transport will also be addressed, as this is heavily influenced by the advent of online shopping.

Finally, EASAC will highlight how academies are using excellent science to address these challenges; by engaging with stakeholders and policy makers, and by promoting innovation and best practices. This side event of the World Science Forum will be based on very recent EASAC work and will stimulate global discussion.

Chairman: Wim van Saarloos

Speakers: William Bruce Gillett, Konstantinos Boulouchos, Neven Duić, George Anastasios Giannopoulos, Øystein Ulleberg



## **14:00 - 15:30 / Special session: SCIENCE DIPLOMACY: GLOBAL CITIES TAKE THE LEAD**

Venue: Hungarian Academy of Sciences, Library Conference Hall

Abstract:

*Just as it happened during the Renaissance, with autonomous cities like Ghent, Bruges, Florence, Venice and Antwerp, which redefined the international legal framework and set the stage for transnational credit and innovative trading networks, contemporary global cities are uniquely suited to translate their knowledge, resilience and productivity into global progress. The future of multilateralism is metropolitan. The global challenges that cities are dealing with, from climate change to health, migrations, water and food security, together with rapid developments in areas such as artificial intelligence, internet of things, robotics and gene editing, raise fundamental issues as to the future of public policy and global governance. Major global metropolises with solid science and technology ecosystems cannot turn a blind eye to the current global challenges. They are critical in implementing the United Nations' 2030 Agenda, turning it from a global vision into a tangible reality. It is time for a city-led science diplomacy. In this panel we will discuss the role of cities in multilateral cooperation for addressing crosscutting challenges and feature the cases of Barcelona, Geneva and Miami, which are already deploying their science diplomacy strategies, thus paving the way for other global cities.*

Moderator: Claire Mays

Speakers: Frances Colón, Nicolas Seidler, Alexis Roig

Coordinator: Martí Jiménez-Mausbach

## **14:00 - 15:30 / Special session: CHAMPIONING YOUNG SCIENTISTS IN SOUTHEAST ASIA: OPPORTUNITIES FOR INTER-REGIONAL HARMONISATION IN PROMOTING INCLUSIVITY, EXCELLENCE AND INTEGRITY**

Venue: Hungarian Academy of Sciences, Library Small Room

Abstract:

Southeast (SE) Asia is a rapidly developing region, home to biodiversity hotspots and multicultural societies. The region's unique colonial past has created a strong desire to define its own narrative, particularly in science, technology and innovation (STI). Despite a relatively small global R&D footprint, SE Asia boasts a vibrant and diverse research community that is increasingly encouraged to contribute to societal progress, beyond pure knowledge generation.

The SE Asian experience contending with growing disenchantment and conflicts in science manifesting in harmful anti-vaccine sentiments and fake news, latent corruption of science, and obstacles in translating the promise of science into societal benefit provide learning opportunities transcending the region.

This forum provides a unique opportunity for the European and global STI community to discover the perspectives of SE Asian young scientists in their efforts to address these challenges faced in STI enterprises through several flagship initiatives such as the establishment of: (1) a training module for the responsible conduct of research to promote science integrity and leadership, (2) an online popular science portal to increase science literacy in the region, and (3) a collaborative network among scientists and science communicators to engage with other stakeholders such as the public, industry and policy makers.

This session aims to (1) highlight the unique and shared challenges and opportunities in the SE Asian STI ecosystem, (2) showcase the on-going efforts by young scientists in the region in promoting scientific integrity and excellence, advocacy and inclusivity, and (3) identify opportunities to collaborate through interregional discourse. Ultimately, the forum aspires to promote a greater appreciation of ASEAN contributions towards global STI, foster collaboration opportunities and enhance interregional harmonisation with local action in addressing global Sustainable Development Goals.

Moderator: Abhi Veerakumarasivam

Speakers: Chai Lay Ching, Rosdiadee Nordin, Khayriyyah Mohd Hanafiah, Orakanoke Phanraksa

#### **14:00 - 16:00 / Special session: RAISING THE VOICE OF EARLY CAREER RESEARCHERS IN GLOBAL SCIENCE AND POLICY**

Venue: Hungarian Academy of Sciences, Kodály Hall

Abstract:

This session is aimed at sharing the current efforts by various Early Career Researcher (ECR) organisations to contribute to the the Global Science and Policy enterprise, and to explore ways of joining forces so as to have even more impact as a collective.

The session will begin with introducing the work that each ECR organisation, and will be carried out in a mix of panel and world cafe discussions to explore how to establish the necessary collaborations to galvanise and connect ECRs worldwide, as well as skill and empower them to increase their combined visibility and impact in the science and policy landscape. A key output of the session will be a roadmap on this combined action.

*This session is open to the public.*

*Please register at [wsfinvitation@office.mta.hu](mailto:wsfinvitation@office.mta.hu) before 15 November 2019.*

#### **14:30 - 16:00 / Special session: CAREER PATHS IN SCIENCE DIPLOMACY**

Venue: Hungarian Academy of Sciences, Vörösmarty Hall

Abstract:

Nobel Prize winning Egyptian American CALTECH Scientist once said “The soft power of science has the potential to reshape global diplomacy”. In his article on Science in Diplomacy published in Cell (vol. 141, issue 2), he also pointed out how science maintained a stable impact on human lives when world was going through economic, political and religious turbulence.

Science and technology played a vital role in the development of today's world throughout the human

history. However, till last century, science was not in the center of policymaking or diplomacy. In today's world, Science diplomacy tackling the trans-boundary environmental issues, global health challenges and building bridges between countries who doesn't have diplomatic relations.

### **Objective**

The aim of this session is to present the current opportunities for a scientist to become a science diplomat. Successful Science Diplomat's career path would be analyzed to give the audience an overview of the barriers and how to overcome them. This session will provide necessary tools for early career scientists to analyze their career paths.

**Moderator:** Mostafa Moonir Shawrav

**Speakers:** Tolullah Oni, Matthew DiFranco, Julia Jackson MacKenzie, Peter McGrath

### **15:45 - 16:30 / Transfer: BOAT TRIP / TRANSFER TO MÜPA BUDAPEST**

**Venue:** Akademia Pier

**Abstract:**

The following transfers are available from the building of the Hungarian Academy of Sciences to MÜPA Concert Hall:

#### **Boat trips with sightseeing:**

15:50 *Budapest* boat leaving from the [Akademia Pier](#) at the Danube

16:20 *Rákóczi* boat leaving from the [Akademia Pier](#) at the Danube

The maximum capacity of the two boats is 500 prs. in total.

**Bus transfer:** buses are leaving from the parking lot in front of the building of the Academy from 15:45 to 16:40.

Recommended alternative public transportation:

### **16:00 - 17:30 / Break: REGISTRATION AND WELCOME AT MÜPA BUDAPEST**

**Venue:** Müpa Budapest

**Abstract:**

Transfers to MÜPA Palace Arts starts at 16:15 and 16:45 form the Palace of the Hungarian Academy of Sciences

### **17:30 - 18:00 / Social event: CONCERT PART I.**

**Venue:** Müpa Budapest, Béla Bartók National Concert Hall

**Abstract:**

Orchestrated by: Edina Szirtes "Mókus"

Perfomed by:

Edina Szirtes "Mókus" (looper, violin, song),

Mihály Dresch (wind and folk music instruments),  
Miklós Lukács (cimbalom),  
Modern Art Orchestra,  
Lautitia Choir, Debrecen (conductor: József Nemes)

Performers: Edina Mókus Szirtes, Mihály Dresch, Modern Art Orchestra, Lautitia Mixed Youth Choir and Lautitia Chamber Choir

**18:00 - 18:45 / Plenary session: OPENING ADDRESSES**

Venue: Müpa Budapest, Béla Bartók National Concert Hall

Masters of Ceremony: Andrea Fekete, László Kiss

Speakers: László Lovász, H.E. János Áder, Shamila Nair-Bedouelle, Daya Reddy, Margaret A. Ann Hamburg, Bonginkosi Emmanuel "Blade" Nzimande

Message from: H.E. António Guterres

**18:45 - 19:00 / Plenary session: UNESCO KALINGA PRIZE FOR THE POPULARIZATION OF SCIENCE HANDOVER CEREMONY**

Venue: Müpa Budapest, Béla Bartók National Concert Hall

Presented by: Shamila Nair-Bedouelle

**19:00 - 19:15 / Plenary session: UNESCO SULTAN QABOOS PRIZE FOR ENVIRONMENTAL CONSERVATION HANDOVER CEREMONY**

Venue: Müpa Budapest, Béla Bartók National Concert Hall

Presented by: Madiha Ahmed Al Shaibani, Shamila Nair-Bedouelle

**19:15 - 19:45 / Break: COFFEE BREAK**

Venue: Müpa Budapest

**19:45 - 20:15 / Keynote lecture: SCIENCE, ETHICS AND RESPONSIBILITY**

Venue: Müpa Budapest, Béla Bartók National Concert Hall

Abstract:

The Values of Science: Citizen Science and Responsible Design in Society 5.0

How to connect ethics to science and technology? In all regions of the world, societies get increasingly interwoven with science and technology. Climate models inform policy-making, gene editing technologies raise ethical concerns about the future of humankind, and the digital revolution connects information technologies with virtually all dimensions of daily life. Some people even claim that humankind is entering the era of 'Society 5.0'. After the society of hunter-gatherers, the agrarian society, the industrial society and the information society, we are said to be at the brink of a 'super smart society', driven by artificial intelligence. How to deal with all these developments in a responsible way?



Speaker: Peter-Paul Verbeek

**20:15 - 20:30 / Social event: CONCERT PART II.**

Venue: Müpa Budapest, Béla Bartók National Concert Hall

Abstract:

Performed by:

Sibebe Cultural and Marimba Group (South Africa)

Lautitia Choir, Debrecen (conductor: József Nemes)

**20:30 - 22:00 / Social event: OPENING RECEPTION**

Venue: Müpa Budapest

**21:15 - 23:00 / Transfer: TRANSFER FROM MÜPA BUDAPEST BACK TO HOTELS**

Venue: Müpa Budapest

Abstract:

Bus transfer back to hotels is available from the venue of the Opening Ceremony from 21:15.

**Recommended alternative public transportation:**

Those who would like to take the opportunity for some sightseeing along the river Danube, can take the *Tram No. 2* back to the city centre, from stop "MÜPA-Nemzeti Színház".

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## **21 NOV / DAY 2**

**09:00 - 09:30 / Keynote lecture: KEYNOTE LECTURE I. ARE THERE ETHICAL LIMITS TO WHAT SCIENCE CAN ACHIEVE OR SHOULD PURSUE?**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Keynote: Margaret A. Ann Hamburg

**09:30 - 11:00 / Plenary session: PLENARY SESSION I. ARE THERE ETHICAL LIMITS TO WHAT SCIENCE CAN ACHIEVE OR SHOULD PURSUE?**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

The plenary lecture focused on the moral principles imposed on today's scientific research and asked whether moral principles should regulate scientific development. Some of the considerations involved issues related to scientific research itself (research methods, authorship, conflict of interest, reporting and responsibility), while others dealt with research practices carrying prevailing possibilities for the whole of society. Remarkable opportunities such as genome editing, artificial intelligence, driverless cars, machine learning and deep learning create difficult and deep questions and raise concerns within society. While there is no one right answer, the scientific community needs to identify the risks and

generate a dialogue with the public. Ethics and science need to progress at the same speed, and research projects must be in line with ethical considerations. Science should be an effective instrument in expanding human knowledge, solving the problem of violence and reducing human suffering. Scientific values thus need to be aligned with the values of society, and scientists must engage in a broader way to reduce anxiety and achieve consensus within the world. International collaborations need to be emphasised more than ever, and nations need to work together toward shared goals to advance scientific productivity. The scientific community has a leadership role, but science alone is not the answer; a collaboration of different representatives from society, including decision makers, is needed to ensure the appropriation of science.

The panel discussion emphasised that the application of ethical practices in science is a process. Experiments from the past will help in assessing the appropriateness of science's approach in the future. Ethics should be the new foundation of scientific discovery.

*Rapporteur: Adél Sepsi, Senior Research Associate, Centre for Agricultural Research*

Moderator (confirmed): Olivier Dessibourg

Speakers (confirmed): Helena Bonciani Nader, Alexander Kagansky, Dr Tyrone W A Grandison, Kjersti Lohne

Rapporteur: Adél Sepsi

#### **11:00 - 11:30 / Break: COFFEE BREAK**

Organised by: World Science Forum

#### **11:00 - 11:45 / Press point: SPEAKERS FROM KEYNOTE LECTURE I. AND PLENARY SESSION I.**

Venue: Hungarian Academy of Sciences, Concert Hall (within the Tudós Café)

Abstract:

- **Peter-Paul Verbeek**, Professor, University of Twente –
- **Margaret A. Hamburg**, Chair of the Board, AAAS –
- **Alexander Kagansky**, Director, Centre for Genomic and Regenerative Medicine, Far Eastern Federal University, Russia –
- **Dr Tyrone Grandison**, Board Chairman, The Data-Driven Institute –
- **Kjersti Lohne**, Postdoctoral Fellow, Department of Criminology and Sociology of Law, University of Oslo

#### **11:30 - 13:00 / Thematic session: THEMATIC SESSIONS I. A. SCIENCE FOR PEACE: SUCCESSES AND FUTURE RESPONSIBILITIES**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

The speakers from the session concentrated on the ethical responsibilities of scientists and science policy in the context of contemporary global challenges. In her opening speech Nurcan Meral Ozel, representing the Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO), highlighted the key role of science diplomacy in managing global crises in the current unstable political environment, characterised by tension and mistrust between global powers. Ms Ozel argued for a science diplomacy which moves beyond national interests and called for the capacity building of scientists in leadership and communication. Jonathan Forman, representing the Organisation for the Prohibition of Chemical Weapons, talked about positive examples of international scientific collaboration such as the implementation of the Chemical Weapons Treaty and the development of the Hague Ethical Guidelines. He concluded that science is indispensable for disarmament. Indira Nath, Professor of the Indian Academy of Sciences, talked about the successes and future responsibilities of science. Her key point was that research ethics have failed to keep pace with rapid scientific developments. Areas of high ethical concern are AI for health, the future of mobile phones, social media, the dictionary of life and DNA, and synthetic biology. Professor Nath underlined the need to set up systems for global participation to discuss emerging technologies, to incentivise good ethical practices by industries and institutions, and for global harmonisation and robust governance. She suggested the establishment of a seal of approval for institutions and investigators practicing good ethics, which could incentivise others. Flavia Schlegel from the International Science Council called for 'positive peace', where nations invest in opportunities to enhance peace. She warned that in the last decade the global peacefulness index has declined, and we have seen a growing gap between the most and least peaceful nations. Ms Schlegel highlighted the responsibility of the sciences in showing that multilateral systems can work and provide concrete answers to current challenges. According to Ms Schlegel, the social sciences should play a key role in bringing forward a human rights perspective and constructing a new excellence framework which values responsible and ethical science. Finally, Tolullah Oni, representing the Global Young Academy, talked about the actions and proactive strategies taken by young scientists globally. She explained the work done so far in finding a unified voice for young scientists, specifically, organising, agreeing on societal priorities and aligning incentives, training scientists with cross-cutting critical skills to address challenges, and deploying scientists across all of society. She stated that young scientists are actively engaged in picking up the mission of responsible science, which could lead to a more inclusive and peaceful society.

*Rapporteur: [Eszter Neumann, member, Hungarian Young Academy](#)*

Moderator (confirmed): Her Royal Highness Sumaya bint El Hassan

Opening Speaker: Nurcan Meral Ozel

Speakers (confirmed): Flavia Ida Elide Schlegel, Jonathan Forman, Indira Nath, Tolullah Oni

Rapporteur: Eszter Neumann, Eszter Neumann

**11:30 - 13:00 / Thematic session: THEMATIC SESSIONS I. B. HOW SCIENCE REINFORCES DEMOCRACY THROUGH A MORE REALISTIC PICTURE OF HUMAN NATURE**

Venue: Hungarian Academy of Sciences, Library Conference Hall

Abstract:

This thematic session focussed on the influence of human nature on democracy and on the question of how science can help us to understand this process. At the beginning Koen Vermeir, moderator of the session, introduced the topic and invited the audience to take part in an interactive talk. As a warm-up, he asked two questions: one about the role of facts and reasons in our complex environment; the other about how science and governments should handle them. The session became truly interactive, as more than eleven questions/comments were discussed. The first presenter was Eeva Hellström, who highlighted the importance of good decision-making based on various relevant information sources. The other main idea of her talk was that decision makers should be more open to dialogue. Shoji Komai showed that the human cognitive bias map is very important in understanding human nature. Most people accept information only from familiar sources (like family or the close community), which blocks collective intelligence. David Mair pointed out the difference in people's value preferences, and noted that facts are usually influenced by frames, metaphors and narratives of interpretation. Trust is also crucial in science and in politics as well, although its mechanism is rather complex. The last presenter was Connie Nshemereirwe, who emphasised that technology and knowledge transfer to Africa often does not work, and not everyone there can take advantage of it. Support from developed countries should be designed based on developing countries' own reality. Then the moderator turned to the audience again, and after another interactive discussion, closed the session.

*Rapporteur: [Ádám Tajti, Assistant Research Fellow, Budapest University of Technology and Economics](#)*

Moderator (confirmed): Koen Vermeir

Speakers (confirmed): Eeva Hellström, Shoji Komai, Connie Vivien Nshemereirwe, David Mair

Rapporteur: Ádám Tajti

**11:30 - 13:00 / Thematic session: THEMATIC SESSIONS I. C. WHAT HUMANS WILL BE AFTER GENOME EDITING OF HUMAN EMBRYONIC STEM CELLS?**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

Abstract:

The discovery of the CRISPR/Cas9 system and the multi-billion biotech industry that it has spawned serve as a cautionary tale for all policy makers who push for a strictly utilitarian view of science. Studying the function of an obscure genomic repeat in a few bacterial genomes was a quintessential basic science paradigm, yet it led to a scientific revolution that paved the way for new therapies, some of which are already in the clinical phase. In merely two decades "CRISPR" and "genome editing" have become household terms, and not a single week goes by without news about yet another groundbreaking discovery or planned therapy that is based on this technology. However, as the thematic session about human genome editing at the World Science Forum (WSF) has shown us, there



are still many practical hurdles that need to be cleared and perhaps even more ethical issues that have to be settled before CRISPR-based therapies will be routinely used.

The first two speakers of the session, Lluís Montoliu (CNB-CSIC, Madrid, Spain) and Anna Veiga (Barcelona Stem Cell Bank, Spain), reminded the audience that while the new technology has been extremely successful in creating disease models in animals, and a few CRISPR-based *ex-vivo* therapies (affecting somatic cells) have already been approved, well-known problems with this technology make it unlikely that it can be used in heritable, germline genome editing in the near future. Unintended off-target effects and on-target mosaicism might be fine when CRISPR-based technology is applied in laboratory settings, but as He Jiankui's reckless experiment last year painfully reminded us, there is too much uncertainty to declare the technology safe for human applications.

An often overlooked question is the scope of human heritable genome editing approaches. Indeed, proponents often have a hard time justifying the use of the technology – except for a very few specific cases – as the use of pre-implantation genetic diagnostics (PGD) offers a more straightforward measure of ensuring that babies are born disease-free.

As the specter of imminent, widespread human germline genome editing looms, national governments and intergovernmental institutions are struggling to come up with a regulatory framework that can serve as a guide for this kind of research in the coming decades. Jennifer Merchant (Université Panthéon-Assas, France) reminded the audience that different countries will have different priorities and a universal regulatory framework is almost impossible. The Oviedo convention is widely accepted, but its wording is ambiguous when it comes to germline genome editing. Such a quickly-developing technology ideally needs flexible legislation with regular revisions, using inputs from an informed public.

Would such regulation be sufficient to keep genome editing in the medical sphere, or would it be the start of a slow descent into “liberal eugenics”? Margaret Sleeboom-Faulkner (University of Sussex, UK) argued for the latter. In her opinion, if we accept human germline genome editing, it will be hard to stem the tide of unintended consequences. Once targeted genome editing seems achievable, it will also become desirable. Companies could start to screen their employees for the secrets in their genomes, prompting parents to do everything they can to ensure that their offspring have the best genetic makeup. Points-based immigration systems could take into account polygenic scores and public healthcare systems with scarce resources could also encourage (or even mandate) DNA testing and corrective genome editing to minimise their expenses. The instrumentalisation of humanity might be closer than we would like to think.

*Rapporteur: Máté Varga, Eötvös Loránd University · Department of Genetics*

Moderator (confirmed): Maria Filipa Ferraz de Oliveira

Speakers (confirmed): Jennifer Merchant, Lluís Montoliu, Margaret Sleeboom-Faulkner, Anna Veiga

Rapporteur: Máté Varga

## **11:30 - 13:00 / Thematic session: THEMATIC SESSIONS I. D. THE URGENT RESPONSIBILITY OF SCIENCE TO SUPPORT SDGS**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

### **Abstract:**

All presenters have agreed on the importance of science and technology in the fueling and actual implementation of SDGs. Although thus far implementation is lagging behind, and in many aspects the global situation is worse than before, there is still hope. The interlinked nature of targets requires a system's approach to better understand the interactions, competitive agendas and various transformation methods. There are six entry points in the system that can trigger the whole net and boost the change; these are: *(1) human well-being and capabilities; (2) sustainable and just economies; (3) sustainable food systems and healthy nutrition; (4) energy de-carbonisation with universal access; (5) sustainable urban and peri-urban development; (6) securing the global environmental commons.*

To secure the success of the implementation of SDGs, science, technology and policy must work hand in hand: the issue is too important and too delicate not to use all sources. Therefore, all stakeholders must strive for cooperation in good faith.

It is not only SDGs that are interconnected, but so too is our world, and so too should science be. Scientific results should be interconnected and partnerships and cooperation mechanisms should be established for better cooperation amongst scientists around the world. There are already good examples of this – academies and young researchers have been founding international partnerships and associations to make their voices heard better. By now it can be said that the ice has broken and science- and technology-related aspects are taken into account to a greater extent when policy decisions are taken, although there is still a long way to go. *'Why don't scientists have a seat at the decision making table?'* one of the presenters asked. At the same time, participants have also agreed that this should work the other way around as well; politicians and key stakeholders should be invited to the tables of science to strengthen their cooperation and to ensure better understanding amongst all parties.

Closing the gap between science, government and the people is still an unfinished task. While the scientific community is working on the science-government aspect, its interaction with the people is also very important. People's assumptions about reality, what they are afraid of and what their real needs are must be kept in mind when providing scientific solutions for the implementation of SDGs. Being practical is also a key element.

The rules that science and technology should follow in all their undertakings include the 3Rs: *rigor, relevance* and *responsibility*. And what is the role of science and technology in the implementation of SDGs? Developing new methods of solving problems through *responsible innovations*, defining the best order of actions and showing the right directions to take. One must not forget about the importance of awareness raising at all levels, the need for the inclusion of SDGs in national curricula, the re-orientation of academy goals to meet the challenges of SDGs and, additionally, the need for an ambassador for the goals.

Finally, there should be a huge international fund financed by states and companies. A global fund for SDG studies, to group the world's best scientists through an open source, to create a knowledge-base

for the change.

Rapporteur: [Brigitta Hidvéghiné Pulay, Advisor](#)

Moderator (confirmed): Nazar Mohamed Hassan

Speakers (confirmed): Eeva Furman, Joshua Phoho Setipa, Teresa M Stoepler, Javier García Martínez, Hazir Farouk Abdelraheem Elhaj, Heide Hackmann

Rapporteur: Brigitta Hidvéghiné Pulay

**11:30 - 13:00 / Thematic session: THEMATIC SESSIONS I. E. CENTENARY OF ORGANIZED INTERNATIONAL SCIENCE COOPERATION AND SCIENCE DIPLOMACY**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

The moderators of the session were Elisa Reis, Vice-President of the International Science Council (ISC), and Alik Ismail-Zadeh, Secretary of the ISC. Ismail-Zadeh summarised the foundation and history of organised international science cooperation. The preliminary form of the current organisation already existed in the 19<sup>th</sup> century. Following the economic destruction of the First World War, scientists met in Paris to decide on the future of science, and the International Research Council (IRC) was founded in July 1919 and was comprised of sixteen national academies and research councils from around the world (Australia, Belgium, Brazil, Canada, France, Greece, Italy, Japan, New Zealand, Poland, Portugal, Romania, Serbia, South Africa, the United Kingdom and the United States of America). At this time only allied countries participated. Around the same time, eight international unions were formed in the fields of astronomy, biology, chemistry, geodesy, geophysics, mathematics, physics and radio sciences.

International scientific cooperation continued to bring together scientists, even during the Cold War. One of the most important achievements was the International Geophysical Year (IGY, 1 July 1957 – 31 December 1958), which brought together thousands of scientists and gave rise to major international initiatives. Soon the first satellite was launched, within the framework of the IGY. In 1979, Bert Bolin, a Swedish meteorologist, led a group of scientists in setting up the World Climate Research Programme (WCRP), which together with the ISC and UNESCO aimed to determine whether the climate is changing and the responsibility of humans in this process.

The session continued with a look at the present and the future of international science cooperation with six speakers: Daya Reddy, President of the ISC; Stéphanie Balme, Research Professor and Dean of the Undergraduate College SciencePo in Paris; Jean-Pierre Bourguignon, President of the ERC; Alexander Khulnov, President of the Russian Science Foundation; Elena Manaenkova, Deputy Director-General of the World Meteorological Organization; and Athish Dabholkar, Director of the Abdus Salam International Centre for Theoretical Physics (ICTP).

Daya Reddy summarised the lessons learned in the past 100 years, emphasising that “Science is a route to opening channels of communication, where these might be very difficult.” He pointed out that International Science Unions reached the same footing as the Academies, and that they are vital in facing current global challenges. By bringing disciplines together, a key current focus is to establish the basis for approaching multidisciplinary challenges. He also raised awareness of the fact that there are many countries which are marginalised, such as developing countries, whom we must not forget.

Stéphanie Balme, representing a university which teaches only humanities and social sciences, pointed out that social sciences have a lot to say about the issues we face, whether it is working AIs, science ethics or other pressing issues. She emphasised that international relations challenges are changing, and both natural and social scientists are necessary, which is why they are launching an initiative called the European Initiative of Science Diplomacy, where the aim is to train science diplomats who understand both sides.

Jean-Pierre Bourguignon, as Chair of the European Research Council, spoke about Europe as a whole. Its current aim is to understand both the institutional and the individual researcher point of view and to reach an agreement with the funding authorities, who are mostly politicians, to allow researchers to provide research initiatives. At the world level, they accept that the ideas which are going to change the world will continue to come up in individual research and therefore fight so that such a space can exist. Taking the long view is a constant battle, as some research findings might take decades to be recognised. The organisation supporting this process is the Global Research Council, which meets every year, with a continuously growing number of participants and funding agencies. Some other challenges they face are science ethics, gender balance and open science; they aim to create principles in terms of how these issues are faced.

Alexander Khulnov presented the Russian Science Foundation, which was formed in 2015. Their aim is to support globally competitive research. They found that international cooperation is fundamental to high quality research and innovation, as evidence shows that international research collaborations perform 25% better than national research initiatives.

Elena Manaenkova talked about how to reach nations in the area of climate research. The International Meteorological Organization has existed since the 19<sup>th</sup> century; it is 146 years old and was one of the first to contact the IRC. Their current goal is to provide data which supports impact-based, risk-based decision making. Their view is that science diplomacy needs to be coherent, consistent and robust. She stated that it is no longer enough to publish in a journal: data must be brought up to the policy processes, and publication impact needs to be measured. They launched satellites and created the Global Public Good System to provide data which is freely accessible to every country and forecasting system, with the help of the most powerful computer in the world.



Athish Dabholkar talked about the ICTP, which sees science as a heritage of humankind. Research at the ICTP and its partner institutes have contributed to five Nobel prizes. The institute has a long tradition of scientific capacity-building in developing countries. The ICTP has climate models which contribute expertise to decision making, and it operates the ICTP Café, which brings scientists together, even during war, and is a unique forum for soft diplomacy. Trieste was declared a Science City of Europe and was awarded the Euro Science Open Forum 2020 with the motto “Freedom for Science and Science for Freedom”.

*Rapporteur:* [Anna Bajnok, Research Fellow, University of Pécs](#)

Co-moderators: Elisa M.d C P Reis, Alik Ismail-Zadeh

Speakers: Daya Reddy, Stéphanie Balme, Atish Dabholkar, Jean-Pierre Bourguignon, Elena Manaenkova, Alexander Khlunov

Rapporteur: Anna Bajnok

**13:00 - 14:30 / Break: LUNCH BREAK**

Organised by: World Science Forum

**13:15 - 14:00 / Press point: SPEAKERS FROM THEMATIC SESSIONS I.**

Venue: Hungarian Academy of Sciences, Small Lecture Hall (1st floor)

Abstract:

- **Her Royal Highness Sumaya bint El Hassan**, President, Royal Scientific Society of Jordan (RSS) –
- **Professor Indira Nath** (Science for Peace) –
- **David Mair**, Head of Unit H1: Knowledge for Policy (Concepts and Methods), Joint Research Centre of the European Commission –
- **Daya Reddy**, President, International Science Council (ISC) –
- **Margaret Sleeboom-Faulkner**, Professor of Social & Medical Anthropology, University of Sussex

**14:30 - 15:00 / Keynote lecture: KEYNOTE LECTURE II. THE ETHICS OF SCIENCE FUNDING**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Keynote: France Córdova

**15:00 - 16:30 / Plenary session: PLENARY SESSION II. THE ETHICS OF SCIENCE FUNDING**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

The Ethics of Science Funding Keynote Lecture and Plenary Session collected experts who have outstanding experience in and responsibility for coordinating how government money is spent on research.

During the session, József Pálincás, host of the session and past president of the Hungarian Academy of Sciences, initiated an interesting survey. The question was whether peer review can be combined with lottery in selecting research proposals to fund. Half of the audience supported the idea, and half of it voted no, a result that nicely illustrates the different views on funding and the importance of talking about related ethical questions.

In her keynote lecture, France Córdova, Director of the National Science Foundation (NSF), gave an excellent introduction to the principles and practice of ethical science funding at NSF. Their guidelines of responsible and ethical conduct include rigor and integrity, peer review, protection of intellectual property and fair treatment of students and colleagues. Dr. Córdova highlighted that ethical science funding is important in enabling research, collecting best practices, effective information sharing and in creating a wide impact in terms of research on society. Dr Córdova identified three pillars, the first of which is identifying the role of NSF, which is achieved by working with stakeholders like the National Academies of Sciences and also the wider scientific community. The NSF is producing a report on scientific production, which does not only correspond to the US but has a global reach as well. The second pillar is funding basic research, which is of extreme importance. A good example is 'AI and Society', a collaborative effort between the social and computational sciences, in which big companies and small startup firms are involved in understanding the social challenges of AI and creating a safe and reliable AI. The third pillar is public engagement inspiration of the next generation in providing access to science and inviting the new generation to participate in science. The training of an ethical workforce includes providing funds to students to cover all stages of study and a new computer science programme that is available for all K12 students in the US and in which specific modules focus on the ethical use of technology. The NSF is participating in the work of various national and international institutions such as the OECD and the Global Research Council, as well as the White House, to create an ethical environment for all in science.

Bonginkosi Nzimande, Minister, Ministry of Higher Education, Science and Technology, summarised his contribution to the Plenary session in three key points. First, the determination of which ethical considerations drive science should be done in an inclusive way. A common understanding of ethical conduct is needed in which society should be included. Funders cannot alone define what is ethical; the voices of those who are lagging behind must be heard to support peace, global understanding, equality and justice. Second, ethics should be part of research promotion. Third, governments and national funding agencies have to be more open to regular independent assessment and to racial and gender integration.

Mohamed Hassan, President of the World Academy of Sciences, claimed in his talk that global inequalities in science and technology funding and gender bias are the two major obstacles hindering inclusive science. To address these inequalities: government funding in all countries should reach at least 1% of GDP; funds provided to poor countries should support education and research; gender balance should be ensured in proposal selection committees; and innovation capacities must be improved in all countries.

Michinari Hamaguchi, President of the Japan Science and Technology Agency, started his talk by saying that science should aim at the wellbeing of humanity and sustainable development, but that it has lost public trust. In order to gain this trust back, curiosity-driven basic research must be transparent and accountable. Communication between scientists and society and companies must be improved in both basic and mission-oriented science. In Japan, inclusive and unbiased disaster response is a priority area in terms of scientific efforts to regain the trust of society.

Stephanie Annett, Postdoctoral Research Fellow at the Royal College of Surgeons in Ireland, talked about the issues of drug design funding. Patents in the pharmaceutical industry have created a drug monopoly for companies for twenty years, which keeps drug prices up and, therefore, makes access to drugs unavailable for many in the developing world. However, as Dr Annett claimed, a large share of pharmaceutical R&D is financed by the public, and, thus, governments pay twice: in supporting R&D and supporting the public to allow people access to expensive drugs. The recommendations to address this problem are: attach public interest conditions to the drug monopoly; increase transparency; favour accessibility in the case of publicly-funded drug IPs; decouple drug prices from research costs.

*Rapporteur: Balázs Lengyel, Centre for Economic and Regional Studies*

Moderator (confirmed): József Pálincás

Speakers (confirmed): Bonginkosi Emmanuel "Blade" Nzimande, Mohamed Hag Ali Hassan, Michinari Hamaguchi, Stephanie Louise Annett

Rapporteur: Balázs Lengyel

**16:30 - 17:00 / Break: COFFEE BREAK**

Organised by: World Science Forum

**16:45 - 17:15 / Press point: SPEAKERS FROM KEYNOTE LECTURE II. AND PLENARY SESSION II.**

Venue: Hungarian Academy of Sciences, Concert Hall (within the Tudós Café)

Abstract:

- **France Córdoba**, Director, National Science Foundation (NSF) –
- **József Pálincás**, Past President, Hungarian Academy of Sciences, World Science Forum (2008-2014) –
- **Michinari Hamaguchi**, President, Japan Science and Technology Agency –
- **Stephanie Annett**, Honorary Lecturer and Post Doctorate Research Fellow, School of Pharmacy and Biomolecular Science, Royal College of Surgeons in Ireland –
- **Mohamed Hassan**, President, The World Academy of Sciences (TWAS)

**17:00 - 18:30 / Thematic session: THEMATIC SESSIONS II. A. OPEN SCIENCE - THE FUTURE OF SCIENCE AND SCIENCE FOR THE FUTURE**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

**Open Science – The Future of Science and Science for the Future**

The pressure on researchers and science funders has become greater and greater in terms of rethinking the strategy of science and making it more useful for society. Open science can help in building a new direction for science for the future. Openness means sharing everything: publications, research data, methodology, infrastructure, software – and sharing these with all potential partners: scientists from other fields, industry partners, and the whole community. This also means that everybody has the right to participate in science; this is the ‘human rights of science’.

Open science has many different aspects and definitions, but the main pillars include transparency, integrity, quality and usability. Thanks to openness, there is an opportunity to integrate all the different voices and aspects. Open science should not be responsive, but rather proactive, for society – scientists need to work together with policy makers and citizens. The tools of the digital era are helping to facilitate the open science movement for the public.

Open science has the chance to re-establish trust in science. The willingness to communicate and to explain the scientific results is crucial in this process. This is not only a task for scientists, but media experts as well.

Science funders also have a role to play in changing the system: to provide the infrastructure for open science. Funding systems need to be changed – not only should publishing results be required for



grants, but the provision of reproducibility, transparency and openness should also be required. Publishers need to assist in this process as well, promoting openness with less of an administrative burden on scientists.

Open science platforms can help bring ideas together so that borders cannot stop science: globalness should be a key part of the system. The scientific landscape is fragmented at the moment, knowledge is isolated and oftentimes researchers are not able to integrate results. The research system needs bridges, and openness can help in solving these issues.

Openness is in the essential interest of researchers, policy makers, and the public as well – changes will never happen in closed science.

*Rapporteur: [Ákos Lencsés, Head of Institutional Coordination, Hungarian Electronic Information Service National Programme, Library and Information Centre of the Hungarian Academy of Sciences](#)*

Moderator (confirmed): Tolullah Oni

Speakers (confirmed): Heide Hackmann, Antonio L Andreu, David Mellor, Marcos Regis da Silva, Kostas Glinos, Ghaith Hamdi Fariz

Rapporteur: Ákos Lencsés

## **17:00 - 18:30 / Thematic session: THEMATIC SESSIONS II. B. RESPONSIBLE RESEARCH AND INNOVATION AND RESEARCH INTEGRITY: ACROSS THE GLOBE AND ACROSS SOCIETY**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

Abstract:

### **Responsible Research and Innovation and Research Integrity: Across the Globe and Across Society**

The thematic session focussed on the responsibility, ethics and integrity of research from different viewpoints, through the eyes of researchers, policy makers and funding agencies. In the first part, six invited speakers shared their thoughts on the topic. They shared their views and experiences about the emerging issues in scientific ethics and also presented global and regional initiatives and best practices for ensuring responsible and ethical research. Simge Davulcu Menget introduced the Responsible Research and Innovation Networking Globally (RRING) project, which aims at spreading the best practices of responsible research and innovation globally using a bottom-up approach and acknowledging that the implementation of RRI needs different approaches regionally according to the particular social, cultural and political environments. Rocky Skeef showed how the research funding system in South Africa ensures the compliance of both institutions and researchers with scientific ethics. He also mentioned the negative effects of predatory journals and presented a statement on ethical research and scholarly publishing practices. Steffen Fritz shared his thoughts about the importance of public engagement in science and mentioned several good examples where citizen science can provide an invaluable addition to universal knowledge. He called attention to the fact that there is a need for harmonising GDPR with citizen science, as in some cases the regulations can make it impossible to collect data with an exact spatial location. April Tash shared her ideas about how we can measure academic freedom and how we can distinguish between the legal and ethical aspects related to

scientific ethics. Faten Attig-Bahar introduced the YESS community (Young Earth System Scientists) and their vision to make science open-access in order to involve multiple sectors and stakeholders in the process of science and innovation. Finally, Maral Dadvar shared Global Young Academy's mission of selecting its members by acknowledging diversity, being inclusive and recognising the excellence of researchers relative to their opportunities. The presentations were followed by a thought-provoking roundtable discussion on the six key topics of the thematic session.

*Rapporteur: Orsolya Valkó, MTA-DE Lendület Seed Ecology Research Group, Research Group Leader*

Moderator (confirmed): April Philippa Tash

Speakers (confirmed): Iain Stewart, Maral Dadvar, Simge Davulcu Menket, Steffen Fritz, Faten Attig-Bahar, Ola El Zein, Rocky Noel Samuel Skeef

Rapporteur: Orsolya Valkó

### **17:00 - 18:30 / Thematic session: THEMATIC SESSIONS II. C. ETHICS OF ARTIFICIAL INTELLIGENCE - GLOBAL CONSIDERATIONS AND POTENTIAL FOR AFRICA**

Venue: Hungarian Academy of Sciences, Library Conference Hall

Abstract:

The session started with a short UNESCO video on the ethics of artificial intelligence (AI). Biological anthropologist Lucilla Spini, the first speaker, pointed out the fact that most private sector initiatives that transfer technology to Africa do not consider ethics – and this has led to continent-wide cybersecurity problems. Cultural aspects are also brought in with the import of technology, but African cultural values need to be taken into account when defining a framework for AI on the continent. Bunmi Banjo, an influential private sector advisor from Nigeria, pointed out that AI-related African markets are driven by the private sector. Egypt, Ghana, Kenya, Nigeria and South Africa are at the forefront of such developments, but the limited number of African researchers and the underrepresentation of African people and data, as well as the lack of full broadband coverage, are causing concern. There are regulatory and structural lacunae because African governments do not act quickly enough in incorporating advances in technology. Dorothy Gordon, a development economist, drew the audience's attention to the fact that none of the big companies controlling the technological space are African; they are Chinese or American. The most important concern for Africa is to avoid creating new dependencies as a result of technology. Technology is moving so fast that we might not have time to bring all stakeholders to the table. Although there are no global norms, the universal declaration of human rights should be the bedrock of any future document on the ethics of AI. Stephanie Okeyo, founder of the scientific website *Under the Microscope*, talked about the youth perspective. African youth want quality education and jobs, whether formal or informal, and a comfortable and diverse social life. For Stephanie, AI is a tool for growth that might contribute to reducing inequalities. However, she is worried that data protection in Africa is not well regulated, and this might lead to data misuse by non-state players. Jana el-Baba from the Cairo Office of UNESCO highlighted that UNESCO addresses the issue of ethical AI through an inclusive, global approach. There are ongoing efforts to elaborate a roadmap and create a normative instrument on the ethics of AI. She also pointed out that regional frameworks are as important as global ones since countries with different normative backgrounds might identify themselves better with regional approaches.

Most questions from the audience addressed the issue of conflicts of interest. Who will define global AI-related norms? How can we get them implemented? Technologically advanced societies are no better equipped to face AI's side effects than any African country. We, as a global society, need to define our own interests.

*Rapporteur:* [Zsuzsanna Biedermann, Research Fellow, Institution of World Economics](#)

Moderator (confirmed): Atish Dabholkar

Speakers (confirmed): Jana El-Baba, Dorothy K Gordon, Bunmi Banjo, Stephanie Okeyo Ajwan'g, Lucilla Spini

Rapporteur: Zsuzsanna Biedermann

**17:00 - 18:30 / Thematic session: THEMATIC SESSIONS II. D. GENDER EQUALITY IN STI: AN ETHICAL ISSUE**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

Abstract:

The promotion of women in Science, Technology and Innovation has been in focus for years, although we are still far away from equality. A gender gap can be observed at all levels of education, from undergraduate students to postdoctoral researchers at the beginning of their career, and in science management/leadership as well. Developing countries are now also undertaking efforts to improve opportunities, to lower gender inequality, and to decrease other, non-gender-related discrimination issues. Examples include the major fellowship programmes in South Africa, one of which is the South African Women in Science Award.

Public funding agencies play a fundamental role in the development of gender equality, and they could have a catalytic function as well. Many of the national funding agencies are now actively promoting the support of female scientists. They could provide a framework and define directions and focuses, not only at national levels, but in jointly promoting improvements at the global level with long-term development outcomes. One of the key points could be to provide visibility for women working in science, because the lack of a supporting environment is a major cause of losing women scientists on their career path. Family-friendly policies, the opportunity to hold temporary positions, and, in general, consideration of unconventional career pathways instead of the regular development are challenging commitments for funding agencies.

*Rapporteur:* [Gitta Schlosser, Research Assistant, ELTE Eötvös Loránd University, Institute of Chemistry](#)

Moderator (confirmed): Romain Murenzi

Speakers (confirmed): Aldo Stroebe, Mucktar Darboe M.Y, Tonya Blowers, L. Anthea Brooks

Rapporteur: Gitta Schlosser



## **17:00 - 18:30 / Thematic session: THEMATIC SESSIONS II. E. SUSTAINABLE AGRICULTURE**

Venue: Hungarian Academy of Sciences, Reading Room

### **Abstract:**

Christiane Diehl (Executive Director of the European Academies Science Advisory Council, EASAC) opened the session by briefly introducing EASAC and its major aims along with InterAcademy Partnership (IAP). She then gave the floor to Ervin Balázs (member of the Hungarian Academy of Sciences and organiser of this event), who shared some facts, thoughts and questions about whether we can one day reach sustainable development goals in agriculture. The first speaker, Sheryl Hendriks (University of Pretoria, South Africa), critically reviewed the most important areas and challenges for sustainable agriculture, with an emphasis on examples and problems in Africa. She referenced the reports of EASAC and IAP and outlined the globalisation of diet (increased demand for non-local and non-seasonal agricultural products, leading to increased processing and transportation), climate change (extreme drought periods as well as flooding, potentially leading to food insecurity, starvation and migration) and food safety and food waste issues as major threats to sustainable agriculture. As for solutions, among others, she proposed providing more information both to policy makers and farmers on the overuse of agrochemicals, on better and more dynamic seed distribution methods, on aquaculture (to link plant cultivation and, for example, fish cultures), as well as on food safety regulations and methods to prevent plant diseases in developing countries. The second speaker, Paulo Artaxo (University of São Paulo, Brazil), started his presentation with the biggest question in sustainable agriculture: How can we feed 10 billion people and at the same time keep the average global temperature increase below 2°C? He recalled that the 2°C value represents only an average temperature rise, but several continental regions of tropical countries are expected to see a much higher increase (4-5°C), which would have a strong negative impact on their agricultural productivity, further increasing global economic differences. In addition, agriculture is responsible for 37% of global CO<sub>2</sub> emissions, which cannot be fully minimised. He emphasised that deforestation should be stopped and replaced by reforestation and afforestation. The production of sustainable bioenergy or crops with better photosynthetic performance and thus yield are challenges to be solved. Due to limited soil and water resources, humans also should probably change their eating habits (for example, by decreasing meat consumption in developed countries). József Popp (Szent István University, Hungary) agreed with the previous speaker in that we should eat less, especially dairy and meat products. He also underlined that 1.3 billion people are overweight worldwide, while 800 million people are undernourished (that is, are not able to satisfy their daily necessary calorie intake needs), and 2 billion people are affected by hidden hunger (that is, eating calorie-rich food lacking essential ions and nutrients). In his opinion high water, energy and food losses from agriculture may also be regarded as technological challenges, while food waste is also a personal choice. After these interesting and inspiring presentations, a very active discussion started amongst the lecturers and audience (researchers from different countries including Romania, India, Serbia and Hungary) on the potential use, regulation and deregulation of genetically modified organisms as well as on precision farming to achieve sustainable development goals in agriculture. Closing remarks and a summary of the session were provided briefly by Robin Fears (Biosciences Programme Director, EASAC).

*Rapporteur: [Katalin Solymosi, Board Member, Hungarian Young Academy](#)*



Moderator: Christiane Sandra Diehl

Speakers: Sheryl Hendriks, Paulo Artaxo, József Popp, Robin Fears

Rapporteur: Katalin Solymosi

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## 22 NOV / DAY 3

### 09:00 - 09:30 / Keynote lecture: KEYNOTE LECTURE III. THE ETHICAL CONDUCT OF SCIENCE

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

Keynote speaker Professor Sheryl Hendriks, in her exceptional lecture, drew our attention to the following:

- the competition we experience in scientific activities;
- our need for evidence-based research and ethical behaviour;
- the factors which have a very strong influence on scientists to push us beyond the boundaries of ethics;
- the political, economic and social burden imposed by our societies on ethics in science.

She emphasised that the common aim of scientists, policy makers and societies is to invite scientists and representatives of private and governmental sectors to a multidisciplinary table to find the best methods regarding research activity.

After resuming their impressions on the keynote lecture (for example, inequality for minorities in science, the current Hungarian example of politicised science), the following speakers provided their thoughts: Professor Nath emphasised global responsibility in ethics and the urgent need for a globally-regulated methodology in special fields of science.

Professor Zhenzhen described examples where aims and methodology could be accepted at the local level, but not at the global level.

Professor Abdool Karim urged the initiation of a more active conversation between science and community and highlighted the importance of global solidarity.

Professor Asakawa, through her personal experience with disabilities, presented the right of disabled people to real-word accessibility.

Professor Saliba summed up the importance of personal and institutional conduct in the development of ethical behaviour. He urged the establishment of scientific collaborations to fight against increased prices in science.

Rapporteur: [Annamária Zsákai, Associate Professor, Eötvös Loránd University](#)

Keynote: Sheryl Hendriks

## **09:30 - 11:00 / Plenary session: PLENARY SESSION III. THE ETHICAL CONDUCT OF SCIENCE**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

Professor Milica Momcilovic opened the session and welcomed the speakers and audience to the meeting.

Professor Sheryl Hendriks, the invited keynote speaker, in giving a broad picture of the main components of the ethical conduct of science with her exceptional lecture, drew our attention to the following:

- The ethics of being a scientist is not only relegated to the study of animals and humans;
- the importance of the competition we experience in scientific activities (competition at personal and constitutional levels);
- we need evidence-based research and ethical behaviour, as well as discussions about and policies on the ethical conduct of science;
- the factors that have a very strong influence on researchers and scientists to push us beyond the boundaries of ethics;
- the political, economic and social burdens imposed by our societies and technology on ethics in science;
- the importance of conflicting and contradictory evidence in research;
- the very high responsibility of policy influence in ethics.

She emphasised that the common aim of WSF meetings and the community of scientists, policy makers and societies of the world is to invite scientists and representatives from private and governmental sectors to a multidisciplinary table to find the best methods in research activity and to improve ethical behaviour.

During Plenary session III – after resuming their discussion regarding the introductory keynote lecture (equality/inequality of minorities in science, science's non-homogenous nature, the importance of interdisciplinarity, the current Hungarian example of politicised science, local/global perspectives, ethics of artificial intelligence) – the speakers reflected on thoughts which emerged and were mentioned in the keynote speech and in their own lectures by giving examples from their research fields.

Professor Indira Nath emphasised the role of global responsibility in ethics in science, the lack of unified ethical regulations, and the urgent need for globally-regulated methodologies in special fields of science (for example, in human embryo implantation).

Professor Li Zhenzhen described some very special examples in her lecture, discussing when research aims and methodologies can be accepted at the local level but not the global level, and highlighting that ethics has played only a marginal role in science.

Professor Quarraisha Abdool Karim urged the initiation of a more active conversation between science and community, and emphasised the importance of global solidarity and the popularisation of science.

Professor Chieko Asakawa, in discussing her personal experiences and thoughts on disabilities, spectacularly presented the right of disabled people to real word accessibility, which can be supported by artificial intelligence, welcoming innovations in this field.

Professor Michael Saliba summed up the importance of personal and institutional conduct in ethics in the development of ethical behaviour. The present status of the scientific market does not allow researchers and scientists to participate in science as real consumers in a free market, so he encouraged the establishment of scientific bodies, communities and collaborations to fight against increased prices and expenses in science.

*Rapporteur: [Annamária Zsákai, Associate Professor, Eötvös Lorand University](#)*

Moderator: Milica Momcilovic

Speakers: Indira Nath, Quarraisha Abdool Karim, Chieko Asakawa, Li Zhenzhen, Michael Saliba

Rapporteur: Annamária Zsákai

**11:00 - 11:30 / Break: COFFEE BREAK**

Organised by: World Science Forum

Venue: Hungarian Academy of Sciences

**11:15 - 11:45 / Press point: SPEAKERS FROM KEYNOTE LECTURE III. AND PLENARY SESSION III.**

Venue: Hungarian Academy of Sciences, Concert Hall (within the Tudós Café)

Abstract:

- **Sheryl Hendriks**, Head of Department, University of Pretoria, Department of Agricultural Economics, Extension and Rural Development –

- **Milica Momcilovic**, President, World Federation of Science Journalists –
- **Quarraisha Abdool Karim**, Associate Scientific Director, Centre for the AIDS Program of Research in South Africa (CAPRISA) –
- **Chieko Asakawa**, IBM Fellow, IBM Research
- **Michael Saliba**, Professor, Technical University of Darmstadt, Junge Akademie, Global Young Academy

**11:30 - 13:00 / Thematic session: THEMATIC SESSIONS III. A. SCIENCE ENGAGEMENT: REDEFINING THE UNEASY RELATIONS WITH POLITICS AND POLICY? SOME TRANSATLANTIC DIMENSIONS**

Venue: Hungarian Academy of Sciences, Library Conference Hall

Abstract:

This is a crucial time for reflecting on the role of science in politics and policy-making. In scientific communities throughout Europe and in the U.S. there is a palpable concern over the degree to which the public trusts scientific experts and authorities. Many view the public health threats emerging as a result of people's concerns about vaccine safety and effectiveness as a sign of decreasing trust in scientific authority. Another case in point is the 'climate change denial', which refers to the unwarranted doubt of scientific consensus on the rate and extent of global warming.

In this new era, populism and anti-intellectualism appear to be serving as catalysts for a political culture that discounts institutional authorities across a range of science policy realms from climate to food safety to health. And, the rise of social media has facilitated the rapid flow of information –and misinformation—about science, thereby providing new avenues for communication and potentially new virtual communities in which to share “alternative facts.” In addition, political or economic interferences with scientific practice raise questions of integrity and freedom, with potentially negative consequences for the quality of science and its support to evidence-based policy.

Consequently, there is increased pressure on scientists to engage with politics and society and to be more transparent about their data and research findings. The line of thinking is that such efforts will bolster public trust in science and promote evidence-based policy decisions. Particularly in Europe, initiatives to promote 'Open Science' have become part of policy plans to accelerate innovation and bolster Europe's competitive edge.

This panel will look at effective and evidence-based ways to engage with R&I stakeholders and science policymakers in an era when scientific evidence and the value of scientific expertise as such, seem to be losing their relevance in decision-making. The panel brings together international experts from both sides of the Atlantic, with backgrounds in public opinion, politics, science communication and science policy.

We will discuss the consequences for scientific practice from calls for increased engagement and transparency. The panelists and audience members will discuss practical issues in science communication with public and policy influencers, including the best ways to communicate evidence-



based policy recommendations with research funders and policymakers.

Moderator (confirmed): Teresa M Stoepler

Speakers (confirmed): Cary Funk, Alexander Gerber, Claudia Aradau, Jason Reifler, Sierd Cloetingh

Rapporteur: Dr Tyrone W A Grandison

### **11:30 - 13:00 / Thematic session: THEMATIC SESSIONS III. B. BASIC SCIENCES INFRASTRUCTURES FOR ETHICAL AND RESPONSIBLE COLLABORATIVE DEVELOPMENT**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Abstract:

Basic sciences infrastructures for ethical and responsible collaborative development was all about how large foundations such as CERN participate in diplomacy, help developing areas, countries, and people from this area in development and education, and change the direction of the brain drain flow.

“Nothing basic in basic science,” was one of the most compelling take-home messages from HRH Princess Sumaya bint El Hassan’s speech. Small or developing countries must invest more in education and basic science, which is the incubator for a better future.

“Cooperation between science and politics becomes ever more important for many reasons,” said Herwig Schopper, former director of CERN.

We must recognise the competence of partners independent of their race, religion, mentality and nationality, and acknowledge and accept real facts and not fake facts. CERN is an excellent example of how science can be a global language. “In times when relations between some nations are characterised by hatred and violence, it is gratifying that science can help to establish a peaceful dialogue between politicians – helping to create mutual understanding and trust.” CERN was, for a long time, the only scientific organisation with the double task of promoting science and bringing nations together. In the council, each country has two delegates: one government official and one scientist. While CERN is a ‘word laboratory’ with a great deal of scientific success, this is the place where the first contact between the West and the Soviet Union was made and the first collaboration between Chinese scientists and Taiwan.

CERN helps to transfer its success and spirit to other regions in need of developing science and technology, and with political frictions.

SESAM in the Middle East, Jordan SEEIIST in south Europe, ICTP in India, and LAAMP in Africa are built on the success of CERN. These infrastructures have significant regional and worldwide scientific relevance in energy and drug discoveries, among other areas.

One of the youngest infrastructures is the Lightsources for Africa, the Americas, Asia and Middle East Project (LAAMP). LAAMP helps people in education and economic development. The training of the students, engineers, and scientists started parallel to the building of the infrastructure all over the world. “Now two beams are already available,” reported Sekazi K. Mtingwa.

The South East European International Institute for Sustainable Technologies (SEEIIST) was proposed in

late 2016 by Professor Herwig Schopper, a former director-general of CERN. The primary mission of SEEIST is science for peace, education and technology transfer. SEEIST will offer 4th Generation Synchrotron Light Source, which would provide a broad spectrum of research and industrial applications, and which contains the Hadron Cancer Therapy and Biomedical Research with Protons and Heavy Ions. Therefore, SEEIST will be used for science and therapy. Everything is going to be built in an environmentally-friendly way, that is, all the heat generated in the infrastructure is used. SEEIST will be sustainable from an economic point of view as well, thanks to the medical centre.

Rapporteur: [Dávid Beke, Wigner RCP](#)

Moderators (confirmed): Michele Zema, Michel Spiro

Speakers (confirmed): Her Royal Highness Sumaya bint El Hassan, Herwig Schopper, Sekazi Kauze Mtingwa, Atish Dabholkar, Sanja Damjanovic

Rapporteur: Dávid Beke

### **11:30 - 13:00 / Thematic session: THEMATIC SESSIONS III. C. THE WIDESPREAD MANIFESTATIONS AND IMPORTANT CONSEQUENCES OF GENDER BIAS IN SCIENCE**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

Abstract:

The session's organiser, Elizabeth Pollitzer, started with an introduction about the implicit, complicit or unconscious and explicit gender bias present in the scientific world. She mentioned that women generally are excluded from highly-paid, prestigious opportunities, for instance, in winning ERC grants. She called attention to the fact that innovation is also biased when a male sample as a norm is taken into consideration: medicines developed only with male samples can be less useful or even dangerous to female bodies. The most striking example of gender-biased development she mentioned was the cc. 35 period tracking applications which automatically transfer data about body temperature to Facebook, even when the user does not have an account. Thus, it can be used to detect whether a woman recently had an abortion, so in countries where abortion is illegal it can be used in such a way that political power can be exercised over personal decisions.

Astrid Linder from Sweden spoke about the goal of making cars safe for both sexes by 2030. At present, all safety devices are tested for males, and an average-sized male dummy represents the whole adult population in safety tests. Thus, any male user different from average beside all the female users are not taken into consideration in the production of new cars. This goes against articles 2, 3 and 8 of the European Union's principles. Cars are only one of the many devices and places used every day by both sexes but which are designed only for men, as was also described by Caroline Criado Perez in her recent book *Invisible Women*.

Aldo Stroebe from South-Africa called attention to the fact that even in 2019 in Africa, around 55% of girls of school age never set foot in a school. Less than 20% of members of both sexes get the opportunity to partake in higher education, but the training they can get is predominantly in the fields of social sciences and humanities, while there is no expertise for developing the hard sciences and for producing relevant new knowledge. One of the biggest problems is that inequality is mutually

reconstituting. What his institution believes is a solution to these problems are customised research funds in order to help target groups according to their own needs. Mr. Stroebel expressed his hope that in 2021, during the next World Science Forum in South Africa, discussions will evolve around what techniques are already working to solve these problems, as the identification of the problems marks the time action is needed to be taken.

Miyoko Watanabe from Japan presented the striking problem of an aging society in Japan, which requires building a new society, and includes well-being for all. In Japan the most important task is involving the female population in science and development, as it has been statistically proven that patents created by mixed-gender research teams have 44% more economic value than those created only by men. The gender gap is, however, only one aspect of the problem: although senior men especially do not like female bosses, the generation gap is generally a bigger problem for men than the sex gap. Thus, society should be trained to form mixed-gender groups in every field so as to encourage cooperation.

Magdalena Skipper, Editor-in-Chief of *Nature* magazines, spoke about their strategy to include more female authors in the publications, for example, by acknowledging authorship where it was hidden before. They are trying to encourage the participation of female reviewers in peer-reviewed articles, and made it a policy that for commissioned papers, all should have at least one female author.

As of now, 18% of papers published in *Nature Ecology* have a female correspondent author. Although *Nature* does not collect data about the sex of its authors, it now has a strategy to encourage more female participation in every phase of the publishing process.

*Rapporteur: Ágnes Máté, University of Szeged, Hungarian Young Academy*

Moderator (confirmed): Elizabeth Pollitzer

Speakers (confirmed): Astrid Linder, Aldo Stroebel, Magdalena Skipper, Miyoko O. Watanabe

Rapporteur: Ágnes Máté

### **11:30 - 13:00 / Thematic session: THEMATIC SESSIONS III. D. CLIMATE JUSTICE FOR MANAGING CLIMATE CHANGE RISKS ON HEALTH**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

Volker ter Meulen opened the session and pointed out that health-related issues had been neglected by IPCC reports for a long time, but now it is time to ask what science can contribute to this discussion.

Robin Fears gave a short introduction on the background of the session and the work already done by the contributors. Climate change has both direct effects (for example, severe weather conditions) and indirect effects (for example, crop failure) on health. The EASAC report published in June 2019 raises a number of ethical issues, including the questions of intra- and intergenerational equity. We have to focus on how to work together and how to ensure good policy.

Thomas Schinko, speaking to the IPCC's Five Reasons for Concern, emphasised that voluntary actions

by countries will not solve global problems. He discussed the importance of the third pillar in international climate policy, Loss and Damage, and the corresponding open access book he published with his colleagues. He urged that adaptation limits be taken into consideration. Finally, he proposed a move towards transformational climate risk management.

JoAnne Linnerooth-Bayer's presentation concerned how extreme climate events and disasters, the majority of which are climate change-related, affect the health of the poor. Although micro-insurance programs could alleviate this burden, affordability remains a difficulty. A proposed solution is to focus on the principle of accountability and move the narrative from compensation to insurance. Insurance programs already operating in Africa can serve as instructive examples. Finally, Maria Nilsson discussed climate-related health risks. Generally, the young, the elderly and pregnant women are extremely vulnerable. But certain climate events also affect those with mental health or other medical conditions. A special ethical problem is the intergenerational effect caused by risks to the young, as well as the long-term persistence of emissions.

*Rapporteur: [Zsóka Vásárhelyi, Postdoctoral Fellow, Centre for Ecological Research](#)*

Moderator: Volker ter Meulen

Speaker: Robin Fears, Thomas Schinko, Joanne Linnerooth-Bayer, Maria Nilsson

Rapporteur: Zsóka Anna Vásárhelyi

### **11:30 - 13:00 / Thematic session: THEMATIC SESSIONS III. E. HUNTING FOR ALIEN WORLDS: RECENT ADVANCES IN EXOPLANET RESEARCH**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

Abstract:

Exoplanet research is one of the most important drivers in modern astronomy. It is a quest for accuracy that motivates astronomers and engineers from all over the world to collaborate on more and more complex space missions. Professor László Kiss, Director General of the Research Centre for Astronomy and Earth Sciences (Budapest, Hungary), opened the session by introducing four speakers, each of whom talked about space telescopes designed specifically for exoplanet science.

Professor Jack Lissauer (NASA Ames Research Center, Moffett Field, CA, USA) summarised the main results of NASA's Kepler mission, which has discovered most of the planets known to humanity. Kepler's method was to observe transit light curves, that is, the dimming of a star's brightness due to a partial eclipse by a planet orbiting that star. Kepler monitored a large number of stars and found several small rocky planets and Neptune-size planets, many of them in multi-planet systems. These results taught us that exoplanets are common, but planetary systems are very diverse: no system like our Solar System and no planet like our Earth have yet been found.



Professor Christopher Broeg (University of Bern, Switzerland) spoke about ESA's CHEOPS mission, to be launched on 17 December 2019. CHEOPS is a follow-up mission to observe the light curves of stars known to host transiting exoplanets in order to measure the planets' sizes more precisely. It will also collect the best targets for future in-depth characterisation, and will allow 20% of its time for high-precision photometry science in any other fields of astronomy. The ability to re-observe any target makes CHEOPS unique.

Professor Szilárd Csizmadia (German Aerospace Center, Berlin, Germany) talked about large photometric exoplanet space surveys from CoRoT to PLATO. The CoRoT mission, led by CNES and ESA, provided the first exoplanet discoveries from space, discovered the first super-Earth (an exoplanet slightly more massive than Earth), and more than doubled the number of exoplanets known at the time. ESA's PLATO mission will target bright stars and aims to detect and characterise Earth-sized planets in the habitable zone around Sun-like stars. These are the exoplanets that may have liquid water on their surfaces.

Professor Giovanna Tinetti (University College London, UK) explained that we now know of more than 4,000 confirmed exoplanets, and their numbers are exponentially increasing. These discoveries mean new questions about the diversity of these objects as well as their composition, atmospheres, weather and habitability. ESA's ARIEL mission, to be launched in 2028, will measure the chemical composition and physical conditions in the atmospheres of about 1,000 exoplanets. It will use spectroscopic methods at visible and infrared wavelengths and will help us understand how planetary systems form and evolve.

In the closing discussion, the speakers emphasised that before 1995, the only known planets were in our Solar System. In 2019, Michel Mayor and Didier Queloz received the Nobel Prize in physics for discovering the first exoplanet. Their discovery has forever changed our conceptions of the world. We now know that planets are ubiquitous, and most stars have them, but we still have not found an alternative for Earth. We have a responsibility to protect our planet.

*Rapporteur:* [Ágnes Kóspál, Research Advisor, Konkoly Observatory](#)

*Moderator (confirmed):* László Kiss

*Speakers (confirmed):* Giovanna Tinetti, Jack Jonathan Lissauer, Christopher Broeg, Szilárd Csizmadia

*Rapporteur:* Ágnes Kóspál

### **13:00 - 14:30 / Break: LUNCH BREAK**

Organised by: World Science Forum

### **13:30 - 14:00 / Press point: ANNOUNCING THE LAUNCH OF THE CHARTER OF ETHICS OF SCIENCE AND TECHNOLOGY IN THE ARAB REGION**

Venue: Hungarian Academy of Sciences, Small Lecture Hall (1st floor)

Abstract:

13:30 – 13:35 Welcome

13:35 – 13:45 Keynote statement: The journey from WSF 2017 to WSF 2019 – HRH Princess Sumaya bint El Hassan, President of RSS and UNESCO Special Envoy for Science for Peace

13:45 – 13:50 Statement by the League of Arab States – Dr. Maha Bakhet Zaki, Minister Plenipotentiary, Director, Intellectual Property and Competitiveness Department

13:50 – 14:00 Brief presentation of the Charter – Dr. Ghaith Fariz, Director, UNESCO Regional Bureau for Science in the Arab States

14:00 Questions and answers

### **14:15 - 14:45 / Press point: SPEAKERS FROM THEMATIC SESSIONS III.**

Venue: Hungarian Academy of Sciences, Small Lecture Hall (1st floor)

Abstract:

- **László Kiss**, Director General, Research Centre for Astronomy and Earth Sciences –
- **Herwig Schopper**, Former Director General, CERN –
- Michele Zema, Executive Outreach Officer, International Union of Crystallography –
- **Michel Spiro**, President Designate, International Union of Pure and Applied Physics (IUPAP) –
- **Joanne Linnerooth-Bayer**, Acting Programme Director Risk and Resilience, International Institute for Applied Systems Analysis (IIASA) –
- **Volker ter Meulen**, President, IAP

### **14:30 - 15:00 / Keynote lecture: KEYNOTE LECTURE IV. ETHICS IN SCIENCE COMMUNICATION**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Keynote speaker (confirmed): Magdalena Skipper

### **15:00 - 16:30 / Plenary session: PLENARY SESSION IV. ETHICS IN SCIENCE COMMUNICATION**

Venue: Hungarian Academy of Sciences, Ceremonial Hall

Moderator (confirmed): James Dominic Gillies

Speakers (confirmed): Linda Nordling, S. Matthew Liao, Angela Devi Saini, Wibool Piyawattanametha

Rapporteur: Ádám Kun

### **16:30 - 17:00 / Break: COFFEE BREAK**

Organised by: World Science Forum

**16:45 - 17:30 / Press point: SPEAKERS FROM KEYNOTE LECTURE IV. AND PLENARY SESSION IV.**

Venue: Hungarian Academy of Sciences, Concert Hall (within the Tudós Café)

Abstract:

- **Magdalena Skipper**, Editor in Chief, Nature –
- **James Gillies**, Senior Communications Advisor, CERN –
- **Linda Nordling**, science journalist, Freelance editor and journalist –
- **Matthew Liao**, Professor and Director, Center for Bioethics, New York University –
- **Angela Saini**, science writer, Freelance –
- **Wibool Piyawattanametha**, Director, Advanced Imaging Research Center, King Mongkut's Institute of Technology Ladkrabang, Thailand & Adjunct Professor, Institute for Quantitative Health Science and Engineering, Michigan State University, USA & Founder, DeepPap, Inc.

**17:00 - 18:30 / Thematic session: THEMATIC SESSIONS IV. A. WHEN POLITICS AND SCIENCE COLLIDE, SHOULD SCIENCE JOURNALISTS PICK A SIDE?**

Venue: Hungarian Academy of Sciences, Library Conference Hall

Abstract:

Hearing 'boo' and 'hear, hear' loudly shouted out is rather unusual at scientific conferences. However, this is exactly what happened in the Library Conference Hall of the Hungarian Academy of Sciences during the World Science Forum 2019. At a thematic session lead by Peter Vermij, a communications advisor based in Amsterdam, and Kai Kupferschmidt, a freelance science writer from Berlin, participants expressed their thoughts about the roles and responsibilities of science journalists. The audience exclaimed 'hear, hear' when they heard something they totally agreed with, and responded with a loud 'boo' as a sign of their disapproval. To facilitate a lively, emotional debate, chairs were arranged just like in the House of Commons of the British Parliament, so opposing parties could look each other in the eye. Crossing the aisle – not a very common thing in the House of Commons – was encouraged here, provided that a participant changed his opinion on issues related to scientific journalism during the debate. Those in doubt or unable to decide were seated separately. It was only at the end of the debate that they were asked if they had made a decision based on the arguments.

The first question was about whether anyone in the room had experienced, seen or reported on a clash between politics and science. Most of the participants moved to the 'yes' side. Some stories that motivated participants to choose 'yes' included: (1) migratory bird habitat destruction in Georgia; (2) abortion being banned in Argentina; (3) the withholding of scientific reports on air pollution in London due to a reluctance to ban diesel cars; (4) medical data being sold in Denmark; (5) selecting among evidence of drugs; (6) the denying of evidence of pesticide-related diseases near agronomical areas in France; (7) NGO persecution in Russia; (8) and several issues in Hungary: the recent confiscation of the

academic research network by the government; destroying Hungarian hydrology related to a dam on the Danube; the banning of gender studies; and the incorporation of a GMO ban in the constitution.

The second question followed: An expert committee advises a government to triple its funding for Alzheimer's disease research. A science journalist writes a news story about its report. Should such a story always include critical comments from scientists in other fields? The majority chose the 'no' side; they argued that scientists from other fields are not Alzheimer's experts. The opposition said that scientists have special mindsets which add credibility to the article. In addition, the money has to be taken away from somewhere – what other researchers feel about it should also be reported (but maybe not in a 'news' article).

The third question was: When academic freedom is under attack, should an association of science journalists officially support a petition against it? More people chose the 'yes' side, saying that journalists have the right to show their attitudes, and they gain credibility if they sign such a petition. They also added that one side is clearly wrong and they are making a false argument. The 'no' side of the room highlighted the fact that journalists are not activists, and that they should maintain a neutral position; they have to report, not judge.

Fourth question: Politicians, celebrities, and scientists all decry fires in the Amazon rainforest. They succeed in drawing attention to deforestation using misleading data and overstating the facts. Should science journalists make *this* the headline? The majority found themselves on the 'no' side of the question (they were labeled 'Machiavellians' later on). The audience booed after the suggestion that journalists sometimes have to give up some of their scientific integrity. For example, metaphors such as 'lungs of the Earth' resonate with laymen and convey an important message. Others added that overstating the facts is very different from fabricating facts. Reporting the overstatements in headlines will result in people thinking that the actual threat is non-existent and the real problem will not be solved. The 'no' side emphasised that science journalists should call out the usage of incorrect data. Science should concentrate on science and not on politics.

Fifth question: When politicians go against a research consensus, is it a science journalist's job to defend science? More people chose the 'yes' side. They argued that science journalists should report the lie and defend the truth. The 'no' side of the room actually did not disagree, but added that there is no such thing as a 'consensus'. Journalists are not the extended hand of science. On the contrary, they should be totally independent. Science journalists are above all *journalists*, and it is not their mission to defend science.

Rapporteur: [Enikő Kubinyi, Senior Researcher, Eötvös Loránd University](#)

Moderators (confirmed): Peter J. Vermij, Kai Kupferschmidt

Rapporteur: Enikő Kubinyi

**17:00 - 18:30 / Thematic session: THEMATIC SESSIONS IV. B. BEYOND SDGS - SCIENCE FOR WELL-BEING**

Venue: Hungarian Academy of Sciences, Ceremonial Hall



## Abstract:

This session focussed on looking beyond the Sustainable Development Goals (SDGs) and whether Agenda 2030 can be reached. SDGs are a broad concept, and at present we are still far away from them rather than beyond. Although it is important to keep a wider perspective, we need to change “business as usual” in order to get there.

The first presenter, Natalie Fomproix, introduced the activities of the International Union of Biological Sciences (IUBS) and talked about the interlinkage between well-being and nature. She emphasised that people depend on biodiversity, but climate change is leading to biodiversity loss. She introduced some of the educational activities of IUBS on climate change and biological experimental modules in resource-limited settings. She concluded that science is crucial for human well-being and that science can help us learn to respect nature.

The second presenter, Kinlay Tshering, talked about Bhutan’s innovative agricultural policy for maximising Gross National Happiness (GNH) and societal well-being. She introduced the four pillars and nine domains in place to maximise GNH and emphasised the role of STI. Bhutan is soon graduating from the list of Least Developed Countries. Measures of poverty reduction and food security were discussed.

The third presenter, Koji Saeki, talked about the co-creative activities of the Japan Science and Technology Agency (JST), beyond SDGs. He mentioned two organisations and various research programmes of JST focussing on science for society. The challenges of extreme weather and disaster risk as well as aging and depopulation were discussed. The importance of engaging diverse stakeholders to solve these challenges was emphasised.

It was reiterated by all of the speakers that human well-being is everyone’s responsibility and that in doing so all (non-human) species on Earth should also be regarded as stakeholders. Coordination, consolidation and collaboration are crucial regarding this. The private sector was urged to take more responsibility and partnership. It was suggested that the world should be viewed as one nation so that no one is left behind.

*Rapporteur: Gergely Toldi, [Board Member, Hungarian Young Academy](#)*

Moderator (confirmed): Miyoko O. Watanabe, Lucilla Spini

Speakers (confirmed): Bonginkosi Emmanuel "Blade" Nzimande, Kinlay Tshering, Koji Saeki, Nathalie Fomproix

Rapporteur: Gergely Toldi

## **17:00 - 18:30 / Thematic session: THEMATIC SESSIONS IV. C. HUMAN RIGHT TO SCIENCE**

Venue: Hungarian Academy of Sciences, Small Lecture Hall

## Abstract:

The human right to science is recognised in two international documents: the Universal Declaration of Human Rights (1948) and the International Covenant on Economic, Social and Cultural Rights (*ICESCR*,

1966, Article 15). The right to science should encompass freedom to do research, the right to share knowledge, the right to benefit from science and open access to science. While the *ICESCR* has been ratified by about 170 countries worldwide, there is a lack of agreement regarding what exactly the right to science means, and there are no guidelines on how governments should report to the UN about what they are doing to implement the right to science. Drawing up the relevant guidelines is a politically sensitive issue.

The stakeholders of the right to science include scientists, indigenous groups, citizens (taxpayers) and consumers of scientific products. The right to science means access to science as a whole, including the applications of science, the knowledge and information on which the applications are based, the scientific literature, the data as well as the samples, materials and subjects of study. These should be viewed as points on a continuum. As we move from applications to samples and materials on the scale, both the risks and the responsibilities increase. It should not be up to governments to decide where individuals are on this access scale.

The American Association for the Advancement of Science conducted surveys with US-based focus groups, via a global online questionnaire, and has also reached out to the national science academies with a survey. The AAAS found that respondents identified ten main benefits of science. Respondents from the US-based focus groups named the improvement of health and health care as the number one benefit of their field, regardless of whether they worked in biology or other fields (for example, engineering). In the global questionnaire the AAAS found that the top five areas in which governments are expected to contribute to the right to science include: i) increased funding; ii) adequate science education for the public; iii) promotion of a positive view of science; iv) open access to information; and v) promotion and protection of academic freedom. In a national context, the actors that can bring together science and human rights are the national science academies and 'young academies'.

The InterAcademy Partnership conducted a survey on the right to science with national academies and 44 young academies. They found that the right to science is both little known and is perceived to be at the core of the mission of the academies. Governmental relations is a key concern; however, national academies and their governments often have fractious relationships.

*Rapporteur: Éva Dékány, [Postdoctoral Researcher, Research Institute for Linguistics, Hungarian Academy of Sciences](#)*

Moderator: Julia Jackson MacKenzie

Speakers: Margaret Weigers Vitullo, Teresa M Stoepler, Marco Perduca

Rapporteur: Éva Dékány

## **17:00 - 18:30 / Thematic session: THEMATIC SESSIONS IV. D. THE ETHICS OF REGENERATIVE MEDICINE**

Venue: Hungarian Academy of Sciences, Reading Room

Abstract:

Regenerative medicine is an emerging medical endeavor aimed at restoring tissue function via

approaches ranging from small molecular drugs, biological therapies and tissue engineering devices to cell and gene therapies. While it holds great potential and offers the promise of curing intractable diseases, as Volker ter Meulen summarised in his opening thoughts, we have to think about how far we can go and what we can do with these new tools. Two main approaches of stem cell therapy and genome editing require especially focused attention with regard to ethical questions and regulations.

Robin Fears introduced an ongoing project conducted by a working group of EASAC and FEAM, which has been reviewing the opportunities and challenges of the regenerative medicine field. Their report, to be published soon, aims at providing guidelines and recommendations for an up-to-date EU regulatory framework of regenerative medicine focusing on stem cell and gene therapy, and will also serve to inform patients, medical centers and policy makers to protect future recipients of regenerative medical care. Göran Hermeén pointed out that there is an ethical obligation to perform more rigorous research to provide better scientific evidence on the unique tools of regenerative medicine. A fine balance between safety and efficacy must be found, and we have to take risks to make progress in the field. The main ethical concerns are around the uncertainty about the risks to and benefits for patients with few other treatment options, the lack of sufficient verified evidence for informed consent, problems related to information supplies from unverified sources, potential conflicts of interest for medical professionals, and issues of equity and fairness about treatment costs and payments where health service resources are limited. Anne Cambon-Thomsen emphasised the importance of harmonising regulations and the implementation of new technologies in regenerative medicine. Research technologies are far ahead compared to their regulation. Patients' interests should be first when we are defining regulations. Balázs Sarkadi summarised the latest progress in the stem cell field, highlighting that while cell therapies differ from medical drugs, a similar regulation is required, including validated GLP and GMP protocols. He pointed out that in the United States alone, there are over 200 clinics providing unregulated stem cell treatment with little evidence and vague rationale, with the intent of making a significant commercial gain. We need more time and patience to properly characterise how to best use stem cells for therapies. Beáta Sperlágh summarised the classic principles of medical ethics and their relation to currently emerging advanced-therapy medicinal products. Although the effects of cell and gene therapy are far more complex than classic drugs, similar regulation is required. Elisa Corritore pointed out the main challenges in the stem cell biology field, including the clinical variability of treatments.

The main questions raised in the panel discussion concerned the means of input from different stakeholders in the field and the necessity of taking risks for the sake for progress. As a community, we should not follow the precautionary principle, as this will prevent advances in the field. However, proper ethical and legislative regulation is required to allow the unique treatment methods of regenerative medicine to find their place in medical care.

*Rapporteur:* [Balázs Enyedi, Assistant Professor, Semmelweis University](#)

**Moderator (confirmed):** Volker ter Meulen

**Speakers (confirmed):** Robin Fears, Göran Hermeén, Anne Cambon-Thomsen, Balázs Sarkadi, Beáta Sperlágh, Elisa Corritore

**Rapporteur:** Balázs Enyedi



**17:00 - 18:30 / Thematic session: THEMATIC SESSIONS IV. E. SCIENCE DIPLOMACY FOR GLOBAL CHALLENGES: INTERNATIONAL FRAMES, NORMS AND ETHICAL PRINCIPLES**

Venue: Hungarian Academy of Sciences, Large Lecture Hall

Abstract:

Thanks to the session's excellent speakers, the audience was able to get first-hand information about the functions, topics, importance and most relevant institutions in *science diplomacy*.

One of the main issues was global water security and management. Firstly, the related EU policies and organisations were presented, for example, the S4D4C and its activities. Afterwards, another insight was provided about the constant problems in the Arab region and the main role of UNESCO in this field. The speakers emphasised that a better cooperation between scientists and decision makers is highly needed in order to support capacity-building in international water management. According to the speakers, this target can be achieved with the internalisation of scientific expertise in policymaking and cross-cutting understanding across diplomatic agendas for more efficient transboundary solutions. The use of international connections and projects as well as collaborations amongst scientists could build strong social capital and trust, which could enhance global development. Raising the public's awareness of environmental questions is also a key step in reaching this goal. Other fields of science diplomacy, such as *food security diplomacy*, were introduced with the organisations concerned, as were likely solutions.

Finally, UNESCO's normative instruments and normative bodies were dealt with, with a major focus on the Universal Declaration on Bioethics and Human Rights. The subjects of UNESCO's General Conference in 2019 were also presented briefly, where the ethical principles related to artificial intelligence were concentrated on. The new agenda offers a new horizon for the protection of the rights of people and the wellbeing of different types of life in the face of scientific and technological advances.

*Rapporteur: Emese Pásztélyi, PhD candidate, Eötvös Loránd University*

Moderator (confirmed): Ghaith Hamdi Fariz

Speakers (confirmed): Eliska Tomalova, Pauline Isabelle Ravinet, Tim Flink, Grace Sirju-Charran, Susana Maria Vidal

**18:30 - 19:00 / Transfer: TRANSFER TO THE MUSEUM OF FINE ARTS**

Venue: Hungarian Academy of Sciences

Abstract:

Bus transfer is available from the building of the Hungarian Academy of Sciences to the Museum of Fine Arts. Buses are leaving from the parking lot in front of the Academy from 18:30 to 19:00.

**18:45 - 19:15 / Press point: SPEAKERS FROM THEMATIC SESSIONS IV.**

Venue: Hungarian Academy of Sciences, Concert Hall (within the Tudós Café)

Abstract:



- **Peter Vermij**, Strategic Advisor, Bird's Eye Communications –
- **Kai Kupferschmidt**, Freelance science writer, contributing correspondent for Science magazine, WFSJ –
- **[Julia MacKenzie](#)**, Senior Director of International Affairs and Science Diplomacy, [American Association for the Advancement of Science](#) –
- **Margaret Vitullo**, Deputy Director, American Sociological Association –
- **Ghaith Fariz**, Director, UNESCO Regional Office for Science in the Arab States

### **19:45 - 20:00 / Social event: WELCOME TO THE GALA DINNER**

Venue: Museum of Fine Arts

### **20:00 - 20:45 / Special session: UNEARTHING - THE RESPONSIBILITY OF SCIENCE IN CREATING A COHERENT VISION FOR A SUSTAINABLE WORLD**

Venue: Museum of Fine Arts

Abstract:

Resource depletion, climate change, biodiversity loss, ecosystem collapse – a rapidly accumulating list of crises may evoke fear of a pending apocalypse. But the original meaning of this ancient greek word is ‘when things reveal themselves’. We are living in an interesting time where a revelation has occurred and we must change course...

Given the combination of dazzling possibilities and existential threats, it is becoming clear that our generation, along with the next, is engaged in redefining what it means to be human. Humanity’s dominance on Earth means that we must take responsibility for managing the planet, at least for the foreseeable future. The responsibility of science has never been greater!

Like these two perceptions of the present moment, there are two schools of thought in the scientific world. One focuses on staying within the Earth’s boundaries to overcome the planetary crisis and avoid system collapse. The other emphasizes technology, the fruit of human ingenuity, to save us. In this performative session the audience will be taken on a journey through human history to discover what values and resulting worldviews have brought us to the present. Due to the interactive character of the performance, the participants will have a unique opportunity to affect the course of the unfolding events and will be challenged to develop a viable and responsible path forward .

**About the IIASA Science and Art Initiative**

Since 2015, the Science and Art Initiative at IIASA investigates how artists and scientists can work together to support transformations to sustainability. The resulting research projects culminate in artistic productions and tackle ethical dilemmas triggered by new scientific insights or technological innovations, and aim to drive sustainable transformation of the way people think and act through active learning and experience. Further information: [www.iiasa.ac.at/arts](http://www.iiasa.ac.at/arts)

Performers: Gloria Benedikt, Marietta Kro, Krisztian Gergye, Alexander Arthur Mays, Piotr Antoni Magnuszewski, Anita Barabás

**20:00 - 21:30 / Social event: GUIDED TOURS - RUBENS, VAN DYCK AND THE SPLENDOR OF FLEMISH PAINTING**

Venue: Museum of Fine Arts

Abstract:

The exhibition of the Museum of Fine Arts running from late October showcases the Golden Age of Flemish painting through the art of the foremost Baroque master of European art, Peter Paul Rubens, and that of his contemporaries. The 120 or so displayed works have been loaned from forty prominent public collections, including the Louvre in Paris, the Hermitage in Saint Petersburg, the Prado in Madrid, the National Gallery in Washington DC and the National Gallery in London. In addition to almost thirty masterpieces by Rubens and more than a dozen by Van Dyck, visitors will be able to see excellent works by other Flemish masters too.

*This event requires registration.*

**20:45 - 22:30 / Social event: GALA DINNER - RECEPTION**

Venue: Museum of Fine Arts

**21:30 - 22:30 / Transfer: TRANSFER FROM THE MUSEUM OF FINE ARTS BACK TO HOTELS**

Venue: Museum of Fine Arts

Abstract:

Bus transfer is available from the Museum of Fine Arts back to hotels. Buses are leaving from the "drop-off point" from 21:30 to 22:30.

**Recommended alternative public transportation:**

Those who would like to take the opportunity, can take the *Millennium Underground Railway "M1"* (the first underground metro line on European mainland, in constant operation since 1896) from stop "Hősök tere" back to the city centre.

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**23 NOV / DAY 4**

## **08:00 - 09:30 / Transfer: ENTRY AND TRANSFER TO THE HOUSE OF PARLIAMENT**

Venue: House of Parliament

Abstract:

Please note that all participants must pass through a security control at the entrance of the [Parliament](#). To gain admission in due time we recommend to join the groups that walk from the building of the Hungarian Academy of Sciences to the Parliament (~10 min.). The first group will leave at 8:00.

Those who arrive alone to the building, please look for gate XII.

People with a disability will be offered a bus transfer to the venue. Bus will leave *from the parking lot of the building* of the Hungarian Academy of Sciences at 8:15.

*From Hotel Mercure Korona* bus transfer will be arranged in two rounds, the first leaving at 8:00, the second leaving around 8:30.

### **Please note:**

Due to the limited capacity of the room and the security protocols, the Parliamentary Programme of WSF requires registration. The deadline for online **registration is 22:00 on 21 November**. To register, please log in and use the "registration" label at the bottom of this box.

**Passport or identity card is required to enter.**

Security control at the entrance is similar to airport controls. Participants of WSF will receive a wrist band allowing only a single entry to the building.

The House of the Parliament is a non-smoking building.

## **09:45 - 10:30 / Plenary session: OPENING ADDRESSES**

Master of Ceremony: Balázs Gulyás

Opening remarks: Orsolya Pacsay-Tomassich, PhD, Shamila Nair-Bedouelle, Bonginkosi Emmanuel "Blade" Nzimande

Message from: Federico Mayor

## **10:30 - 11:00 / Keynote lecture: 20 YEARS OF SCIENCE DIPLOMACY**

Speaker: Elmer William Colglazier Jr.

## **11:00 - 11:30 / Break: COFFEE BREAK**

Organised by: World Science Forum

## **11:30 - 13:00 / Plenary session: PLENARY SESSION V. | PARLIAMENTARY PLENARY SESSION | 20 YEARS OF SCIENCE DIPLOMACY**

Abstract:

This session focused on a presentation of the achievements of science diplomacy over the past twenty years and the challenges that still lay ahead, in addition to what opportunities we have to cope with

them. The moderator, Katalin Bogay, emphasised the importance of sharing and learning from each other.

The first presenter, Her Royal Highness Sumaya bint El Hassan, spoke about the constant change surrounding humankind. Her wish is to have a thoughtful, informed and engaged future, and to reach this goal science should be at the heart of national and global consciousness. She emphasised that future generations are watching the scientific society and asked the audience to make them proud. In the end, she expressed her hope of, through a global science that unites us all, having a positive and peaceful future.

The second presenter, Carole Mundell, spoke about the importance of having diversity and equity in the scientific field. She highlighted the fact that women and girls are still underrepresented in decision making and that 130 million girls around the globe do not have access to education. She pointed out that this affects the whole of society. She emphasised the need to invest in people to develop their full potential and lift young people up for the common good.

Teruo Kishi, the third presenter, summarised the Japanese strategy of having active public relations and network building. The strategy is based on three main pillars – security, trade and global issues – and focuses on science, technology and innovation. The idea of ‘Society 5.0’ is a fusion of cyber and physical space with an inclusive society, and is highly promoted by the Japanese government. Japan also promotes the Global Research Collaboration to pursue mutual benefits among countries. His takeaway message was that there are no borders in basic science, though cooperation in technology should be taken care of.

The fifth presenter, Elisa Reis, spoke about having an optimistic vision about what the future holds. She expressed her view that we have the power to accomplish a lot, and many new initiatives are a good example of this. Science is and will be key in promoting progress, and we are still unaware of many solutions.

The sixth presenter, Simge Davulcu Menket, spoke about her experiences in Nicosia, the ‘last divided capital of Europe’. She reiterated that science doesn’t have any borders and pointed out the importance of scientific conversation in peace talks. In Cyprus, science diplomacy was a way to open up many opportunities and create bridges between conflicted regions. A new organisation, the Science for Peace Initiative, was founded in 2016. The organisation focuses on what unites us, building peace with tools like fact-based language. She closed her presentation with the words of Kemal Atatürk: “Peace at home, peace in the world!”

After the presentations, the presenters were joined by Elmer William Colglazier, Jr., who discussed the topic of the past, present and future of science diplomacy in further detail during a panel discussion.



They summarised the past twenty years and the difference that has been made, and also discussed what we should do better in the future. They pointed out stronger political connections and governmental liaison, and mentioned the complexity of the Sustainable Development Goals. They also concluded the need to build trust using the tools of science diplomacy.

*Rapporteur: Fanni Bobek, ELTE*

Moderator: Katalin Bogayay

Speakers: Her Royal Highness Sumaya bint El Hassan, Carole Mundell, Teruo Kishi, Elisa M.d C P Reis, Simge Davulcu Menket, Elmer William Colglazier Jr.

Rapporteur: Fanni Bobek

**13:00 - 14:00 / Plenary session: ENDORSEMENT OF THE DECLARATION AND HANDOVER CEREMONY**

Declaration presented by: László Lovász

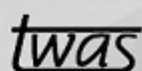
Handover ceremony: László Lovász, Bonginkosi Emmanuel "Blade" Nzimande

**14:00 - 15:30 / Social event: FAREWELL RECEPTION**

ORGANISER



PARTNER ORGANISATIONS



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