

# Call for Science Programme Session Proposals

EuroScience Open Forum 2020 Trieste (IT), 5-9 July 2020

*Freedom for Science, Science for Freedom*

The most important enablers of human progress are collaboration and cooperation. This is especially true in science, which could not have reached its current level of advancement if knowledge had not been passed on among and across generations, making it possible for individuals to benefit from the discoveries of predecessors and contemporaries alike.

ESOF 2020 will take place in Trieste, a port since Roman times and a free port since the 18<sup>th</sup> century. The free port, located at the crossroads between Europe and Asia, is the symbol and embodiment of our motto “Freedom for science, science for freedom”, which encourages the cross-border exchange of ideas, people and new inventions: just like trade in a harbour, science can only flourish in openness and diversity.

The EuroScience Open Forum (ESOF) is a biennial, interdisciplinary, pan-European, general science meeting and debate, which aims to:

- **Showcase** the latest advances in the natural and social sciences.
- **Promote** dialogue on the role of science and technology in society and policy.
- **Stimulate** public interest and engagement on innovation, science and technology.
- **Connect** the European science community with global partners and perspectives.

ESOF 2020 (5-9 July) will take place in the old Harbour in Trieste, which originated in



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Proudly founded by



ESOF2020 Local Organizer



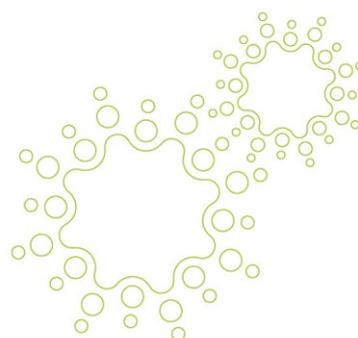
Roman times and was further developed during the Austro-Hungarian empire, thereby creating a hub for the free exchange of ideas alongside the commercial port.

The event will build upon the historical role of Trieste as a gateway between east and west, north and south, as well as on its present position as one of the European cities with the highest density of research institutions. In this unique context, ESOF will unite delegates to share and discuss issues, ideas and opportunities that emerge when science works in tandem with society and the business world; this unique setting will provide a fertile ground on which to devise common strategies and frameworks to put into practice visions such as those of former UN secretary general Ban Ki-Moon: “Science is vital to advance sustainable development, reduce inequality and eradicate extreme poverty”.

Sessions will focus on current and future ground-breaking science. ESOF is inclusive of all disciplines. In this document, and in ESOF, the word *science* is understood to encompass natural and social sciences as well as the arts, humanities, engineering and medicine.

ESOF 2020 will comprise several distinct programme tracks:

- A **Science Programme** of seminars, workshops and debates on the latest research and related policy issues, structured around a programme of keynote speakers and the hot topics.
- A **Science-to-Business Programme** to explore the major issues for research within business and industry and the role of universities for business.
- A **Career** programme showcasing career opportunities across Europe and beyond for researchers at all stages of their careers.
- An **Exhibition** that showcases the best of European academic, public and private research and business excellence.



- A public engagement programme, the **Science in the City Festival**.
- A **Forum** to host other meetings, satellite events and networking opportunities (e.g. science policy advisers and science media).

**This call seeks session proposals for the Science programme. Instructions for submitting your proposals can be found through the ESOF 2020 website ([www.esof.eu](http://www.esof.eu)). The website also contains information about the programme tracks.**

## **Guidelines**

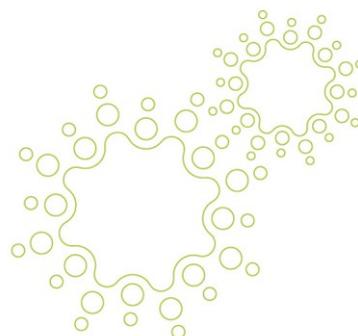
Please read the following information about the scientific themes and guidelines carefully. **The submission is open from March 13<sup>th</sup>, 2019 at 00:00 CET and the deadline for session proposals is June 15<sup>th</sup>, 2019 at 23:59 CET.**

All submitted proposals will be reviewed and assessed by the ESOF 2020 Trieste Programme Committee. **Please note that the Programme Committee reserves the right to request modifications to proposals prior to acceptance and to make minor modifications to titles and abstracts when compiling the final programme.**

When assessing proposals, the ESOF 2020 Trieste Programme Committee will take the following criteria into account:

### **1. Content**

- Relevance to conference themes. \*
- Quality, originality and topicality in order to attract delegates and ensure they benefit from insights and discussion. \*
- Interdisciplinary approach and, where relevant, policy perspectives.
- Relevance to cross-cutting themes.



- Potential to attract media interest.

## 2. Participants' Name, Affiliation and Coordinates

- International perspective (the proposed speakers/participants within sessions should come from multiple countries. Overall geographical balance will be sought in the programme). \*
- Diversity (panels will be expected to aim for an appropriate balance of age and gender and maximize inclusivity).

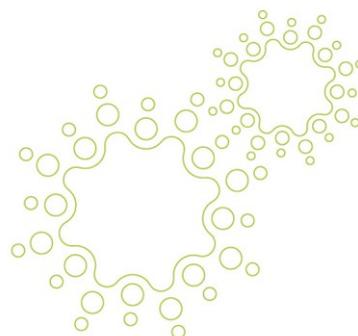
## 3. Format

- Interactive sessions are required to maximize opportunities for discussion and dialogue. Innovative formats will be welcome.

*\* Essential criteria: where possible proposers should address each of these criteria. At its discretion, the Programme Committee may accept sessions which vary from the criteria.*

Proponents are responsible for the organization of their sessions. In particular, they are responsible for inviting proposed speakers/participants. To facilitate interactivity, proposed sessions are expected to balance the number of speakers per session and the time available for discussion. The full range of conference facilities will be available.

**Neither EuroScience, nor ESOF 2020 has funds available to support or facilitate conference attendance.** Participants' involvement in the event must be completely self-financed: this includes contributors' travel, accommodation and any additional expenses. However, no registration fee will be charged to the session organizer, speakers and registered media.

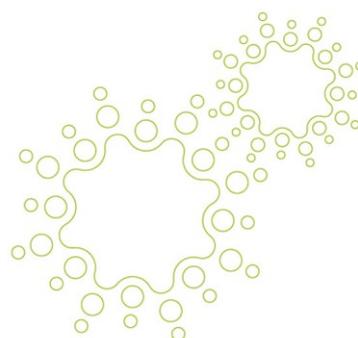


## **ESOF 2020 Trieste Themes**

The conference will highlight and interrogate the interplay between science, society and the business world. Particular attention will be devoted to the analysis of the conditions that foster scientific and technological breakthroughs and on their role in the wider socio-cultural environment - including education, innovation policy, finance and investment, the popularization of scientific advances. This interdisciplinary setting will provide a fertile ground on which to devise common strategies that will help to shape European initiatives in research and innovation, for example to make the mission-oriented approach which forms the backbone of the upcoming *Horizon Europe* framework a reality.

Sessions are encouraged that focus on past, present and future trailblazing science. The event will also promote public debate about science-related social change. ESOF 2020 will be an opportunity to discuss the sociocultural and economic implications of scientific revolutions from regional, national, European and global perspectives. This international perspective is particularly significant since, in the face of global challenges and the globalization of trade and political governance, science is increasingly considered an international collaborative endeavour.

There are two categories of themes, cross-cutting and scientific, both of which are reflected in the selection criteria.



## Cross-cutting themes

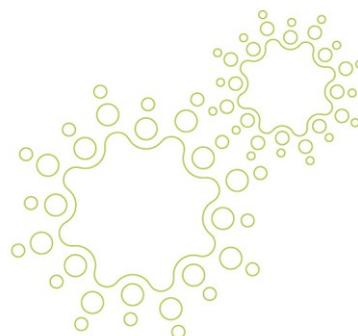
A core question threading throughout the event will be: how does one foster excellence in science as an agent for positive and ground-breaking change? This question may be articulated through the following cross-cutting approaches (although we welcome other interpretations):

- Fostering breakthrough science;
- Ensuring responsible research and innovation, aligned with the values, needs and expectations of society;
- Harnessing science and technology for growth, employment, economic success and personal wellbeing;
- Radical approaches to grand societal challenges – health, food, water, energy, climate, security, innovation;
- Understanding and overcoming social and gender inequalities;
- Engaging the public and inspiring the next generation of researchers, developing a citizen science approach.

Sessions that explore the effects of science on human society and culture, and the governance of social, biological, physical and other assets and systems are encouraged, as are sessions that seek to address the facets of science as an international collaborative endeavour, for example funding and governance.

## Scientific Themes

**BLUE PLANET** Water covers roughly 72% of the surface of the planet; 96% of this water is found in oceans. It should be obvious that any damage to the state of health of oceans can have a tremendous impact on the world. This is made particularly evident by the effect of the rise in the average temperatures caused by anthropic pollution, which is causing severe harm both to marine ecosystems as well as to terrestrial communities, both human and not human. At the same time, freshwater makes up only roughly 6% of the total,

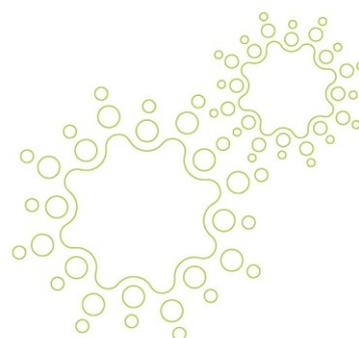


which means that our most precious resource is in very limited supply. There is a pressing need to not just discuss these themes but to start acting on them. For this reason, alongside the latest technology to monitor the state of the earth's waters, contributions are welcome that highlight innovative approaches and solutions which are being employed to reach a sustainable use of the seas, as well as surface and ground waters.

Suggested issues to explore: water remediation; water scarcity and migrations; environmental monitoring; ocean exploration; plastics in oceans; sustainable use and management of coastal areas; marine and freshwater ecosystems; healthy oceans, seas, and fresh-water bodies; diplomacy and cooperation for the health of the Mediterranean; desalination; zero-carbon ports; offshore renewable energy; deep-ocean mining, water vapor and climate change; seawater encroachment in coastal areas.

**I COMPUTE THEREFORE I AM** In less than one century, computing has completely revolutionized our world. From financial markets to scientific experiments and space missions, an increasing number of activities which were impossible just a few decades ago, are being made commonplace: the main enabler of this revolution is computing speed, the steady increase in computational power which allows to handle ever increasing quantities of data. With the prospect of quantum computing being realized in the near future and artificial intelligence challenging humans at their own game, there is no telling how a further leap in our computational resources will change our world, with challenging implications. From distributed computing to big-data acquisition and processing and the latest advancements in artificial intelligence, contributions are welcome that show how advancements in hardware and software are being applied across all fields of knowledge, as well as perspectives of where they will lead us. Particular attention should also be devoted to emerging issues in law, such as the problem of liability in a world where decision-making is increasingly automated.

Suggested issues to explore: quantum computing; the future of cryptography; neuromorphic computing; artificial intelligence; statistics and big data; ethics and law in

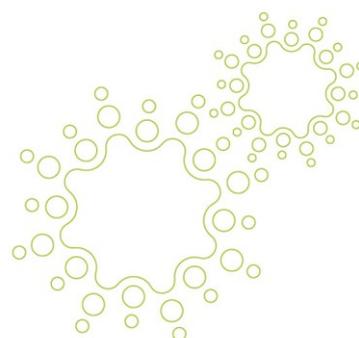


big data; distributed computing; public perception of technology; human-machine interaction; blockchain and post-blockchain technologies; virtual reality; the future of telecommunications; high-performance computing; in-memory computing; photonic computing; algorithms as decision-making entities.

**SCIENCE AND SOCIETY** Science is not merely a tool to solve technical issues, but a way to change the way we see and interact with the world around us. By continuously shrinking the realm of the impossible, the question of whether something can be done, is rapidly changing to if something should be done. This puts science in a special relationship with humanity: it can be a wonderful educator, invaluable in opening our minds, while at the same time it can clash with accepted social and cultural norms, and therefore needs to be kept under scrutiny in order to not be at odds with ethics. Moreover, these questions are tightly coupled to the diverse socio-cultural backgrounds in which they emerge, thus giving rise to a large variety of scenarios. Contributions are welcome that focus on the multi-faceted interaction between science and society.

Suggested issues to explore: philosophy of science; science in court; anthropology of science and technology; ethics; information society; science in education; vocational training; perspectives on migrations; wealth inequality; responsible research and innovation; gender and society; public engagement; linguistics; fostering gender mainstreaming; sociology of knowledge; science in the public discourse; sociocultural anthropology; cooperation across borders; science-art interaction; scientific communication; behavioural sciences.

**BREAKING FRONTIERS IN SCIENCE AND KNOWLEDGE** By continuously breaking the limits of what is deemed impossible, science and the advance of knowledge more generally are challenging the way we see and interact with the world. By focusing the attention on new issues as well as by providing paradigm-breaking solutions to long-standing problems, science is at the core of our ability to advance human understanding and capabilities. This panel is dedicated to all contributions which aim at highlighting how science is pushing the

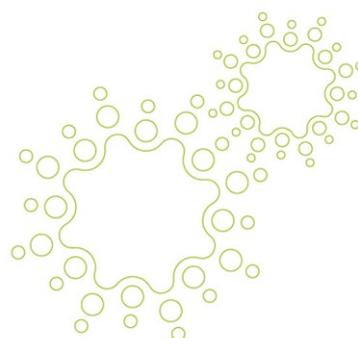


boundaries of human knowledge. Moreover, contributions are welcome that highlight how the knowledge and innovative thinking stemming from cutting-edge research could contribute to shaping our future. From the theory to ground-breaking experiments in all sciences from physics to biology, to disruptive thinking in the social sciences and humanities, discussions should be embodied by the quote “Things are only impossible until they are not”.

Suggested issues to explore: high-energy physics; exotic states of matter; ultrafast imaging at the nanoscale; cosmology and deep space; dark matter; nanotechnology; new discoveries in biology; theoretical physics; the nature of the reality in science and the humanities; physiology in extreme environments; the future of biotechnology; non-equilibrium systems; frontiers in mathematics; simulation of complex systems.

**SUSTAINABLE FUTURE** In the last century, technology has advanced at a dizzying pace. In order to make sure we are not on a dead-end road, efforts must be taken to continuously ensure the sustainability of our course of action. To this end, initiatives such as the UN Sustainable Development Goals can act as an important source of inspiration to help guide further development towards a sustainable future. Submissions are welcome which focus on means to closely monitor the impact of our actions on the environment as well as on efforts to model the future evolution of climate and ecosystems, biodiversity, renewable resources, optimization of resources and waste reduction, recycling and upcycling, the future of energy production., zero-carbon technologies and all-around innovative approaches to these issues.

Suggested issues to explore: energy storage; energy harvesting; doughnut economics; pollution; upcycling; environmental monitoring; 3Rs: reduce, reuse, recycle; environmental monitoring; present and future of nuclear waste; technological forecasting; public understanding of environmental issues; the legacy of fossil fuels; the future of transportation; social effects of climate change; resource management; renewable energy

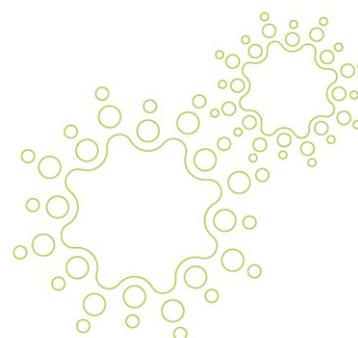


sources; climate change; adaptation to climate change; zero-carbon technologies; biodegradable materials.

**NOURISHING THE PLANET** Urban sprawl and pollution are all contributing to the erosion of agricultural land. Climate change is putting further pressure on our ability to produce food of consistent quality and in consistent quantity. At the same time, there are increasing asymmetries in the production and consumption of food, which contribute to the generation of large quantities of waste on one end of the spectrum, and famine on the other. Consequently, the lack in quantity and quality of food in many parts of the world has important effects on both health and social issues. Science has a fundamental role in the optimization of the use of land, in the rational use of resources and in the emergence of innovative approaches to eradicate both hunger, waste and unbalances in the distribution of resources.

Suggested issues to explore: genomics; food waste and the circular economy; food processing and preservation; insects in the kitchen; land degradation; the future of meat and alternative protein sources; pesticide-free agriculture; 3D printing and synthetic food; innovation in beverages; traceability and the blockchain; GMOs in science and law; sustainable strategies in Africa; food production and global warming; soil health; nutrition and health; biodiversity; hydroponics.

**LIVE LONG AND PROSPER** Medicine has increasingly become an interdisciplinary, translational subject. Science and technology have brought a tidal wave of novelty which put synchrotron facilities and nanotechnology at the bedside with classical anatomy. From proton accelerators to robotics, virtual reality and bioinformatics, techniques which were associated exclusively with advanced fundamental research in physics and computer science are becoming increasingly common place in clinics. In the spirit of article 25 of the UN declaration of Human Rights, there also lies the question of how to allow these advancements to be at the service of everyone's well-being. Contributions should highlight how science, both through technological advancement and through paradigm shifts, is



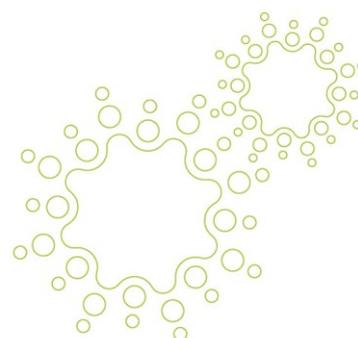
radically innovating the way medical conditions are approached, cured and prevented. Moreover, in order to reach citizens, issues related to the interaction between modern medical technology and society, such the democratization of healthcare and the steady increase in life expectancy, are extremely welcome.

Suggested issues to explore: translational medicine; genomics; nanotechnology; big data for health; physics and math for medicine; prevention; patentability in the pharmaceutical sector; new frontiers in oncology and immunotherapy; communication and awareness in medicine; precision medicine; neuroscience; computational medicine and biology; robotics, modelling in diagnosis and treatment; prosthetics and bio-engineering; active aging; ambient intelligence; the cost of high-tech medicine.

**SCIENCE FOR POLICY/POLICY FOR SCIENCE** We live in an era in which, more than ever, humans face issues that have a global impact: the only way to tackle them effectively is to do so in a concerted, cooperative manner. Science has the potential to overcome differences in culture and religion by uniting people through shared interests. Contributions should highlight how science provides a unique framework and approach which can be used as a powerful diplomatic tool, able to bring together people of different world views for the common good, creating bridges where conflicts cannot be easily solved by diplomats and politicians.

Suggested issues to explore: science as a universal language; past and present in scientific diplomacy; research evaluation; reproducibility and integrity of research; academic freedom; smart specialization in emerging countries worldwide; fostering networks; regional and inter-regional cooperation; evidence-based policy; gender and social inequalities in science; public engagement; science funding models; accessibility of scientific results; open research infrastructure.

**THE SMART CITY** Due to their size and more direct connection to their constituency, cities are inherently more dynamic than states. The most forward-thinking and trendsetting



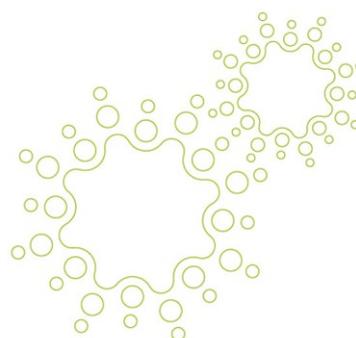
initiatives oftentimes stem from mayors or citizen associations, which spearhead a more widespread adoption of sustainable policies and habits based on the interplay between local resources and international networking.

Suggested issues to explore: urban planning; strategies for lowering food miles; cities networks; green cities; improving quality of life in urban environments; carbon-neutral cities; inequalities; smart grids; pollution; science and trade; smart cities; internet-of-things; think globally, act locally; transportation; resource optimization; net-zero impact buildings.

## **Selection and Submission Guidance**

### **Selection process**

- The submission is open from March 13<sup>th</sup>, 2019 at 00:00 CET and **the deadline for session proposals is June 15<sup>th</sup>, 2019 at 23:59 CET.**
- Proposals will be evaluated by the Programme Committee (PC) during Summer 2019.
- The PC may request revisions to some proposals. In this case, proponents will be advised by mid-September and revised proposals should be resubmitted by October 15<sup>th</sup>, 2019 for a second stage evaluation.
- Proponents whose proposals have been accepted or rejected during the first round of evaluations will be informed during September 2019, and proponents of revised proposals will be informed of the outcome of the second stage evaluation by mid-November 2019.



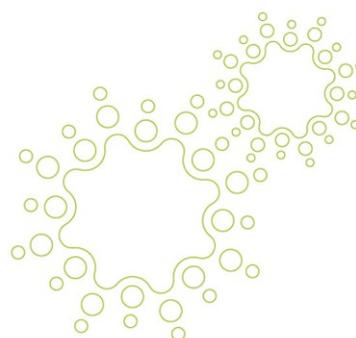
### **Session duration and format**

Prior to submitting a proposal, applicants are advised to consider the duration and format of their session. Each session will last for 1 hour and 30 minutes.

You are encouraged to make your session as interactive as possible. There are several presentation formats available, and you are encouraged to develop your own innovative and creative formats. Examples of formats are:

- Traditional panel discussion: maximum 3-4 speakers (maximum 15 minutes each) followed by extended discussion with the audience.
- Interactive round table: a flexible format with brief presentation and space for questions, answers and reactions.
- Workshop: a flexible format, led by a speaker experienced in stimulating exchanges of views and using practical exercises.
- Pro and con debate on a controversial topic. Innovative formats (hackathons, Ted-type talks, 3-minute Thesis style sessions) will also be welcome.

Please remember that this is not a conventional traditional scientific conference and that your audience may be diverse (Scientists, Policy makers, Students, General public, etc.) and not necessarily knowledgeable in your field. It is recommended that you pay attention to the communication style and the ability of your suggested speakers to address an ESOF audience. Please target your proposals at a scientifically literate but non-specialist audience. Be prepared to be flexible, patient, and be sure to leave enough time for debate. Please note that the session should be chaired by an experienced moderator nominated by the session proposer(s).



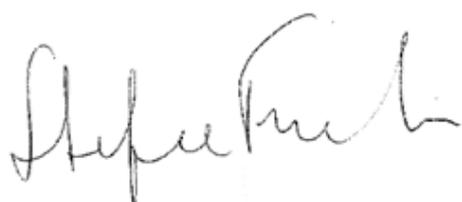
**Please note that the Programme Committee reserves the right to modify session formats after your session has been accepted.**

### **Submitting a proposal**

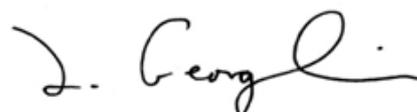
The submission process is managed by ESCMP, accessed through the ESOF website ([www.esof.eu](http://www.esof.eu)) – the system will go live from March 13<sup>th</sup>, 2019. The process for the submission of proposals is as follows:

1. Visit [www.esof.eu](http://www.esof.eu) homepage and click on the button “Submit a proposal”. You will be redirected to the ESCMP login page.
2. If you do not already have an account, you will be asked to create one. If you already have an ESCMP account, please log on to the system using your username and password.
3. Once you are logged in to ESCMP you will be redirected to the “New proposal” page.
4. Follow the on-screen instructions provided to submit your proposal. Please note that you can continue working on your draft proposal until you are ready to submit.
5. By clicking on “submit” your proposal will be accepted as final and no further modifications will be possible.
6. It is not possible to submit a proposal after the given deadline.
7. Following submission, you will receive an email to confirm the successful submission of your proposal.

**Thank you for submitting a proposal to ESOF 2020 Trieste.**



Prof. Stefano Fantoni  
Champion ESOF 2020



Prof. Luke Georghiou  
Chair of the Programme Committee

