

# ESOF2010

EUROSCIENCE OPEN FORUM

TORINO, JULY 2-7

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## ESOF2010 Sessions Programme

Updated August 7, 2010



## Contents

<b>Plenary Talks</b>	<b>3</b>
<b>Keynotes</b>	<b>9</b>
<b>Sessions</b>	<b>25</b>
Scientific Programme	25
Career Programme	130
Science to Business Programme	164



## Opening Lecture

2 July, h. 18.00 - 20.00, Auditorium

**Julia Fischer**

German Primate Centre, Göttingen

### **Animal minds talk**

(Please note: the Opening Lecture is part of the Opening Ceremony)

What do animals know about the world they live in? What do they communicate to each other, and how? And how did our understanding of animal minds change over time? In this talk, I will examine the frontiers and boundaries in the study of animal thinking, with a focus on nonhuman primates. Current evidence suggests that nonhuman primates have complex representations of their physical and social surroundings. For instance, they can accurately discriminate between different sizes and quantities – although greed may interfere with their performance. Monkeys also have a good understanding who in their group is friends with whom, who outranks whom and who is currently courting whom. Quite clearly, nonhuman primates are excellent observers, and they can make accurate inferences based on subtle social cues. Likewise, monkeys and apes are able to attribute meaning to fine-grained variation in the structure and sequential composition of vocal signals.

Yet, it appears that monkeys do not understand that others have a mental life of their own – and apes do not fare so much better. Neither monkeys nor apes intend to inform each other about the things they know – two key components of human social cognition and communication. It appears that the social cognition and communication of nonhuman primates is characterized by a deep dichotomy in terms of their abilities to provide information compared to their adeptness at seeking information. The challenge for future research will be to uncover the changes in brain architecture and genetic make-up that allowed humans to integrate these two domains and additionally take in the perspective of others.

Julia Fischer obtained her PhD from the Free University of Berlin in 1996 with a study on the vocal communication of macaques. After research visits to the NIH and Harvard University, she was offered a postdoctoral position at the University of Pennsylvania. During this time, she conducted 18 months field research on wild baboons in the Okavango delta in Botswana. In 2001, she moved to the Department of Developmental and Comparative Psychology at the Max-Planck-Institute for evolutionary Anthropology in Leipzig. She obtained her habilitation in 2004 and was awarded a Heisenberg Fellowship. In the same year, she became a professor at the Georg-August-University of Göttingen, a joint appointment with the German Primate Center where she is head of the Cognitive Ethology Laboratory. Her research centers on the vocal communication, cognition and social behavior of nonhuman primates, but she also studied the word learning abilities of a domestic dog and the ultrasonic communication of mice. She recently established a field station in Senegal to study Guinea baboons and West African vervet monkeys. In 2007, she was elected into the Berlin-Brandenburg Academy of Science. She is the president of the European Federation of Primatology, member of the board of the Ludwig-Maximilian-University Munich and serves as a panel member for the ERC.

<http://www.esof2010.org/schedule/1/2p>



## Plenary Lecture

3 July, h. 18.15 - 19.15, Auditorium

**Kurt Wüthrich** ETH Zurich and The Scripps Research Institute, La Jolla – Nobel Prize for Chemistry 2002

### Science as an odyssey in the protein universe

Professor Wüthrich started his professional life in natural sciences by obtaining university degrees in chemistry, physics, mathematics and sports. This multifaceted training made him particularly perceptive to the reactions of his body to stress in sports competition, and this awakened his curiosity to get a deeper insight into the mechanisms by which nature works on the level of the molecules of life. For example, being interested in the interplay between oxygen uptake and performance in physical exercise, his early work in structural biology was focused on the oxygen-transporting protein haemoglobin, and today he is heavily involved with the problem of blood-doping in amateur and professional sports. This lecture intends to convey an impression of the joy and excitement that a scientist had the privilege to experience during decades of exploring ever new secrets of living organisms.

Born in Switzerland in 1938, Kurt Wüthrich was educated in chemistry, physics, and mathematics at the University of Bern before pursuing his Ph.D. at the University of Basel. He then left to work at the University of California, Berkeley and then at the Bell Telephone Laboratories. Wüthrich returned to Zurich in 1969, where he began his career at the ETH, rising to Professor of Biophysics by 1980. He currently shares his time between the ETH Zurich and the Scripps Research Institute in La Jolla, California. His research interests are in molecular structural biology, and in structural genomics. His specialty is nuclear magnetic resonance (NMR) spectroscopy with biological macromolecules, where he contributed the NMR method of three-dimensional structure determination of proteins and nucleic acids in solution. He was awarded the Nobel Prize in Chemistry in 2002, the Prix Louis Jeantet de Médecine, the Kyoto Prize in Advanced Technology, and a number of other awards and honorary degrees.

<http://www.esof2010.org/schedule/1/3p>



## Plenary Lecture

4 July, h. 18.15 - 19.15, Auditorium

**Peter Agre**

Director, Johns Hopkins Malaria Research Institute; Bloomberg School of Public Health

### **Aquaporin water channels: from atomic structure to malaria**

Found throughout nature, aquaporin water channels confer high water permeability to cell membranes. Discovered in human erythrocytes, AQP1 has been characterized biophysically, and the atomic structure of AQP1 is known. Twelve homologous proteins exist in humans. Some transport only water (aquaporins); others transport water plus glycerol (aquaglyceroporins). These proteins are required for generation of physiological fluids (urine, cerebrospinal fluid, aqueous humor, sweat, saliva, and tears). Involvement of aquaporins in multiple clinical states is becoming recognized—renal concentration, fluid retention, cataract, skin hydration, brain edema, thermal stress, glucose homeostasis, malaria, and even arsenic poisoning. Aquaporins are particularly important in plant biology. This information now provides the challenge of developing new technologies to manipulate aquaporins for clinical or agricultural benefits.

Born in 1949 in Minnesota, Peter Agre received his M.D. in 1974 from the Johns Hopkins University School of Medicine. He then served as the Vice Chancellor for science and technology at Duke University. Agre leads the Johns Hopkins Malaria Research Institute (JHMRI). He was elected to the National Academy of Sciences in 2000 and to the American Academy of Arts and Sciences in 2003. He is also a founding member of Scientists and Engineers for America (SEA), and serves on its Board of Advisors. In 2003 he was awarded the Nobel Prize in Chemistry (which he shared with Roderick MacKinnon) for his discovery of aquaporins, water-channel proteins that move water molecules through the cell membrane. In 2009, Peter Agre held the post of 163rd president of the American Association for the Advancement of Science (AAAS).

<http://www.esof2010.org/schedule/1/4p>



## Plenary Talk

5 July, h. 18.15 - 19.15, Auditorium

**Anton Zeilinger** Professor of Quantum Optics, Quantum Nanophysics, Quantum Information University of Vienna

### **Quantum information and the foundations of quantum mechanics**

Research on the foundations of quantum mechanics has given rise to the field of quantum information science. It should be stressed that this research beginning around the 1970s was not motivated by the search for applications but rather by pure fundamental curiosity. Today, quantum computation, quantum teleportation, quantum communication, or quantum cryptography are novel concepts in information technology with no classical parallel. The resulting experimental development in quantum information science has led to unprecedented control of quantum systems which again opens up the door for novel fundamental experimental research directions. For example, the high-precision control of entangled photon states even over very large distances allows novel tests of the concepts of non-locality and realism or the development of quantum microoptics opens up new experiments in higher-dimensional Hilbert spaces. It is to be expected that such experiments in turn will again give rise to new possibilities in quantum information science.

Anton Zeilinger (born May 20, 1945 in Ried im Inkers, Austria) is currently professor of physics at the University of Vienna. He is also the director of the Vienna branch of the Institute for Quantum Optics and Quantum Information at the Austrian Academy of Sciences. Zeilinger has performed many experiments including quantum teleportation, quantum cryptography, and quantum computation. He has also performed a number of experiments in atom interferometry and in quantum interference of large molecules, like C<sub>60</sub> and C<sub>70</sub>. He has held positions at the University of Innsbruck, the Technical University of Munich, the Technical University of Vienna and at the MIT. Zeilinger has received many awards for his scientific work, among which an honorary professorship at the University of Science and Technology of China and two honorary doctorates as well as the King Faisal Prize of Science, the German Order of Merit, a Fellowship of the American Physical Society and the Isaac Newton Medal of the British Institute of Physics. Recently, he received the Wolf-Prize.

<http://www.esof2010.org/schedule/1/5p>



## Special Invited Lecture

6 July, h. 12.00 - 12.45, Auditorium

**Harold Kroto**

Florida State University

**Science and science education in the 21st century**



## Pleanry Lecture

6 July, h. 18.15 - 19.15, Auditorium

**Ada Yonath**

Department of Structural Biology, Weizmann Institute, Rehovot

### **Hibernating polar bears and the secrets of structural-based drug design**

Detailed three-dimensional structures are essential for the understanding of the mechanisms of the life process. One of the most vital life processes is the production of proteins, the cellular "workers". The information for protein composition is encoded in DNA genes, and the ribosomes are the universal cellular "factories" that translate the genetic code into proteins.

Owing to the multiple functional conformations of the ribosomes, their structural complexity, their large size and their marked tendency to deteriorate, the determination of their structure was considered to be formidable. Hints obtained from the hibernating polar bears, opened the way for these studies. Constant methodological innovations and technical developments enabled the determination of the high resolution structure of the ribosomes and shed light on the critical mechanisms of antibiotics activity, thus providing imperative tools for structural based drug design and improvement.

Ada E. Yonath (born 1939) is the current director of the Helen and Milton A. Kimmelman Center for Biomolecular Structure and Assembly of the Weizmann Institute of Science. In 2009, she received the Nobel Prize in Chemistry along with Venkatraman Ramakrishnan and Thomas A. Seitz for her studies on the structure and function of the ribosome, becoming the first Israeli woman to win the Nobel Prize. Yonath's work focuses on the mechanisms underlying protein biosynthesis, by ribosomal crystallography, a research line she pioneered over twenty years ago. Additionally, she studied the modes of action of over twenty different antibiotics targeting the ribosome, the mechanisms of drug resistance and synergism, and the structural basis for antibiotic selectivity, paving the way for structure-based drug design.

<http://www.esof2010.org/schedule/1/6p>



## Keynote Talk

3 July, h. 12.00 - 12.45, Auditorium

**Elena Cattaneo**

Director, Laboratory of Stem Cell Biology and Pharmacology of Neurodegenerative Diseases, University of Milano

### **Scientific knowledge, a labour of love**

Just as desert roads shift over time to fulfill their critical functions, scientific knowledge proceeds through various trajectories and multiple dimensions to generate a dense network of hypotheses, uncertainties, results, failures, emotional distresses, and hopes. These scientific investigations may begin at a single molecule, a stem cell, or an evolutionarily distinct species, but entrance into the laboratory inevitably leads to systematic dissection and elucidation of the unknown that surrounds them. Science, however, does not occur in a vacuum, and its inextricable links to philosophy, politics, and society should be taken seriously. Public outreach, accountability, transparency, and integrity should be the banners of any scientific endeavour, as they all contribute to the strengthening of the bond between science and society. Taken together, these seemingly diverse factors synergise to turn the desert of the unknown into a desirable land of knowledge and love.

Elena Cattaneo is Director of the Laboratory of Stem Cell Biology and Pharmacology of Neurodegenerative Diseases at the Department of Pharmacological Sciences, as well as a co-founder and first appointed Director of UniStem, the Centre for Stem Cell Research of the University of Milan. The main research theme of her lab is neural stem cells, and the molecular pathophysiology of Huntington's Disease. Funders of Cattaneo's lab include the Huntington's Disease Society of America (H.D.S.A.), Hereditary Disease Foundation, High Q Foundation, the European Union, and Telethon Italy. Prof Cattaneo's studies on neural stem cells and Huntington's disease saw her awarded the Gold Medal by the President of the Italian Republic in 2001.

<http://www.esof2010.org/schedule/1/3ka>



## Keynote Talk

3 July, h. 12.00 - 12.45, 500

**Ernst Fehr**

Director, Institute for Empirical Research in Economics, University of Zürich

### **The nature of human altruism**

Self-interest constitutes a powerful motive in humans which has led many social scientists to assume that it typically overrides non-selfish, social, motives. However, a large body of evidence over the last two decades indicates that this view is wrong. Many people exhibit non-selfish motives, but there is also strong heterogeneity in the strength of social motives and a significant share of people seems to be predominantly selfish. This heterogeneity of social motives gives rise to seemingly paradoxical outcomes. Sometimes the vast majority of all people seem to behave in a selfish manner, while almost all people seem to co-operate at other times, despite material incentives to the contrary. These puzzling phenomena will be explained on the basis of important insights generated in experimental economics.

Ernst Fehr was born in Austria in 1956. He studied economics at the University of Vienna, where he earned his doctorate and completed his education. He has been an affiliated faculty member of the Department of Economics at MIT, former president of the Economic Science Association and the European Economic Association, an honorary member of the American Academy of Arts and Sciences, and John Kenneth Galbraith Fellow of the American Academy of Political and Social Sciences. He received the Marcel Benoist Prize in 2008. His research focuses on the proximate patterns and the evolutionary origins of human altruism and the interplay between social preferences, social norms and strategic interactions. Fehr's work is characterized by the combination of game theoretic tools with experimental methods and the use of insights from economics, social psychology, sociology, biology and neuroscience for a better understanding of human social behaviour.

<http://www.esof2010.org/schedule/2/3ka>



## Keynote Talk

3 July, h. 17.15 - 18.00, Auditorium

**Sheila Jasanoff**

Pforzheimer Professor of Science and Technology Studies, Harvard Kennedy School

### **A new enlightenment: science and the future of humanity**

For much of the 20th century two radically opposed strains of discourse about science and technology met and clashed in public debate. The optimistic strain held that scientific innovation brings continual progress, in the form of better and longer lives, enhanced creativity and communication, and reduction of disease and poverty. The pessimistic strain held that science and technology enable domination, rationalize human actions and rob them of meaning, and bring unintended harm to health, safety, and the environment. But we need a new, less polarized discourse on science and technology, one that can celebrate their genuine achievements without neglecting their real limitations. Skepticism, humility, experimentalism, and civic engagement are virtues that science shares with democracy, and they need to be restored.

Sheila Jasanoff is Pforzheimer Professor of Science and Technology Studies at the Harvard Kennedy School. A pioneer in studying the role of science and technology in the law, politics, and policy of modern democracies, she has written more than 100 articles and chapters and is author or editor of a dozen books, including *Controlling Chemicals*, *The Fifth Branch*, *Science at the Bar*, and *Designs on Nature*. Known for her prominent role in building in the field of Science and Technology Studies, she was founding chair of the STS Department at Cornell University (1991-1998). She has held guest professorships at numerous institutions, including MIT, Cambridge (UK), Kyoto, and the University of Vienna. Jasanoff has served on the Board of Directors of the American Association for the Advancement of Science and as President of the Society for Social Studies of Science. Among her many academic grants and honours are a 2010 Guggenheim Fellowship, an Ehrenkreuz from the Government of Austria, and a fellowship at the Berlin Center for Advanced Study. She holds AB, JD, and PhD degrees from Harvard, and an honorary doctorate from the University of Twente.

<http://www.esof2010.org/schedule/1/3kb>



## Keynote Talk

3 July, h. 17.15 - 18.00, 500

**Jean-Claude Guédon**

University of Montreal

### **The impact of open access on academic research and publishing**

Open access is free, permanent, full-text, online access to peer-reviewed scientific and scholarly material. The present debates about open access slowly bring about the need to look beyond the simply functional dimensions of self-archiving or open access journals to reach the level of what might be called a new "political economy" of knowledge. The complex, mixed roles of scientific publications are not there by chance. Instead, they represent the difficult materialization of protracted negotiations between various types of players beyond publishers and authors: librarians, research administrators and granting agencies are also involved in this process. Furthermore, none of these categories are homogeneous and, in particular, publishers act on behalf of extremely diverse crowds: scientists, of course, but also stockholders, and mixed, hybrid organizations abound. One of the more interesting facet of this whole debate, in the recent past, has been the question of how to build an open access world and why it has turned out to be more difficult than initially envisioned. Ultimately, science as a competitive sharing of minds, as a system of distributed intelligence, will be much enhanced by open access even as individual scientist will find themselves leaving scientific feudalism to enter a true Republic of science at long last.

Jean-Claude Guédon (born in 1943 in France) studied chemistry at Clarkson University in Potsdam, New York, and earned a Ph.D. in history of science at the University of Wisconsin, Madison. He has been a professor at the Université de Montréal since 1973, and he is a long-time member of the Internet Society. He has advised numerous governmental bodies, including the Ministère de la Recherche (France) for their e-publication project in the humanities and the social sciences; the Agence de la francophonie for matters pertaining to new technologies; the Quebec Minister of Communication in charge of the information highway; and the Quebec Ministry of Education for the integration of the new technologies into the curriculum.

<http://www.esof2010.org/schedule/2/3kb>



## Keynote Talk

4 July, h. 12.00 - 12.45, 500

**Felicitas Pauss** Coordinator for External Relations, CERN, Geneva, and professor of Experimental Particle Physics, ETH Zürich

### The archeology of the universe

The research goals of particle physics are to study the structure of the Universe at its most fundamental level by exploring the basic physics laws that govern the fundamental building blocks of matter and to explore the structure of space-time.

The important next step for the advancement of fundamental science is the Large Hadron Collider (LHC) at CERN, the European Particle Physics Laboratory in Geneva (Switzerland). Proton-proton collisions at an unprecedented energy will in the coming years illuminate a new landscape of physics, possibly answering some of the most fundamental questions in modern physics, such as the origin of mass, the unification of fundamental forces and new forms of matter.

In this lecture we shall address the following questions: why do we perform fundamental research in particle physics and how it relates to cosmology, i.e. addressing the above mentioned physics goals of LHC in a broader context; what are the instruments and their technological challenges to perform this research; and the mission of CERN and the impact of fundamental research on society.

Felicitas Pauss received her PhD degree in Theoretical Physics and Mathematics at the University of Graz (Austria) in 1976. She continued her research at the Max-Planck Institute in Munich (Germany), Cornell University (USA) and CERN, before she was elected professor at ETH Zurich in 1993. From 1997 to 2007 she was the director of the Institute for Particle Physics of ETH Zurich. Since January 2009 she has been in charge of coordinating CERN's external relations. Her research activities concentrate on two main research fields: particle physics at the high-energy frontier and astroparticle physics. She has published more than 450 scientific papers and given more than 260 talks at international conferences, colloquia and seminars as well as presentations for government officials, funding agencies and the general public. She has received the "Grand Decoration of Honour" of the Federal Province of Styria (Austria) and "Cross of Honour for Science and Art, First Class" of the Republic of Austria. She is member of the German Academy of Science Leopoldina.

<http://www.esof2010.org/schedule/2/4ka>



## Special Invited Talk

4 July, h. 17.15 - 18.00, Auditorium

**Antonia Byatt**

Novelist

**The art and science of the brain**

**Giacomo Rizzolatti**

Head, Department of Neurosciences, University of Parma

“When scientists describe the relations between axons, dendrites, perception, memory, concepts and the world outside a brain, I feel I am reading a description of what I always sensed was happening, but could not describe” (A.S. Byatt).

What can science learn from art and what can science say about the triggering of the creative process? A novelist and a leading neuroscientist (whose team discovered mirror neurons), world-class personalities in their fields, will talk about their work and seek to explore common grounds. What happens in the brain of a novelist when she is sketching the outline of a new work, chiseling characters, connecting places and memories, playing with the rhythm of the language? Are mirror neurons (which may be important for understanding the actions of other people, and for learning new skills by imitation) somewhat involved in the process? Is empathy towards fellow human beings the key factor? Conversely, is it possible that a deeper exploration of the creative process could help neuroscientists in their interpretation of the brain's workings? Maybe even put forth new hypotheses or devise new experiments? The ultimate goal is to explore the possibility of true interdisciplinarity and to shed light on the shadow of metaphors in different contexts.

Dame Antonia Susan Duffy, usually known as A. S. Byatt, is an English novelist, poet and Booker Prize winner. In 2008, The Times named her among their list of “The 50 greatest British writers since 1945”. Born as Antonia Susan Drabble, she was educated at The Mount School, York, Newnham College Cambridge, Bryn Mawr in the United States, and at Somerville College, Oxford. She lectured in the Department of Extra-Mural Studies of London University, at the Central Saint Martin's College of Art and Design and at University College London. Among her best known novels: *Possession* (1990), *Angel and Insects* (1992), and *Babel Tower* (1996). More recent books by Byatt have brought to the fore her interest in science, particularly cognitive science and zoology.

Giacomo Rizzolatti was born in Kiev and studied in Padua, where he graduated in Medicine and specialized in neurology. After three years in Pisa, his academic carrier took place mostly at the University of Parma, where he became professor of Human Physiology, his present academic position. He became famous worldwide when his research team discovered mirror neurons in the frontal and parietal cortex of the macaque monkey. Giacomo Rizzolatti has been President of the European Brain Behavior Society and Italian Society for Neuroscience. Among his major awards are the Golgi Prize for Physiology, the George Miller Award of the Cognitive Neuroscience Society, the Feltrinelli Prize for Medicine 2000, and the Grawemeyer Prize for Psychology. He has received Honorary Degrees from the University Claude Bernard of Lyon, from the University of St. Petersburg and from the University of Leuven.

<http://www.esof2010.org/schedule/1/4kb>



## Keynote Talk

4 July, h. 17.15 - 18.00, 500

**Tom Kirkwood**

Institute for Ageing and Health, Newcastle University

### How long will you live?

Life expectancy is increasing by 5 hours a day in developed nations and by more than this in some developing countries. The implications for society are profound. At the same time, science is beginning at last to unravel the deep mysteries of the ageing process. Ageing is more malleable than was previously thought. It arises not from a strict genetic programme but from the gradual accumulation of damage in cells and tissues of the body. This can be modulated for example by nutrition, lifestyle and environment. What is the future of ageing? How can we make it better?

Tom Kirkwood is Professor of Medicine, Co-Director of the Institute for Ageing and Health at the University of Newcastle, and Director of the Centre for Integrated Systems Biology of Ageing and Nutrition. Educated at Cambridge and Oxford, he worked at the National Institute for Medical Research until 1993 when he became Professor of Biological Gerontology at Manchester. His research focuses on ageing and on understanding how genes as well as non-genetic factors, such as nutrition, influence longevity and health in old age. He has published more than 250 scientific papers and won several international prizes for his research. His books include the award-winning *Time of Our Lives: The Science of Human Ageing* (1999).

<http://www.esof2010.org/schedule/2/4kb>



## Keynote Talk

5 July, h. 12.00 - 12.45, Auditorium

**Angelika Brandt**

Head, Zoological Museum, University of Hamburg

### **Deep-sea research in the Southern Ocean: from patterns to processes**

The ANDEEP (ANtarctic benthic DEEP-sea biodiversity: colonisation history and recent community patterns) expeditions recovered a tremendous number of organisms of all size classes, making it possible for the first time to compare Southern Ocean deep-sea faunas to those collected elsewhere using similar sampling strategies and the same array of gear. Based on this rich and diverse material we were able to characterise faunal communities in terms of their composition and their relation to depth and region, latitude and longitude. ANDEEP increased our knowledge of the scale and patterns of species diversity in the deep ocean and improved our understanding of the origins of the abyssal fauna, its degree of endemism as well as species' bathymetric ranges.

While the ANDEEP project has revealed patterns of biodiversity within different faunal group and documented that these can vary significantly, we still do not know anything about the processes behind these biodiversity patterns, and we know very little about the ecology and role of deep-sea fauna. To fill this knowledge gap, a successor to the ANDEEP project, ANDEEP-SYSTCO (SYSTem COUpling) has been started in the Atlantic sector of the Southern Ocean within the framework of the International Polar Year.

Angelika Brandt studied education, biology and English, and passed a research diver's examination at the University of Oldenburg. Her first thesis on the ultrastructure of an isopod's sensory organ and her dissertation thesis on the origin of Antarctic Isopoda were awarded by the Ministry for Science and Technology. Her post-doc started in 1992 in the Institute for Polar Ecology in Kiel, where she studied community patterns and particle flux in the European Northern Seas. Brandt joined 12 expeditions to the Arctic and Antarctic including a Brazilian-German diving expedition in 1989-90 on King George Island. In 1995 she became professor at the University of Hamburg and since 2004 she is the head of the Zoological Museum. In 2008 she was awarded the SCAR Medal for excellence in Antarctic Research. Her science focuses on systematics, evolution, ecology, biogeography and biodiversity of peracarid crustaceans in the deep sea and polar regions.

<http://www.esof2010.org/schedule/1/5ka>



## Keynote Talk

5 July, h. 12.00 - 12.45, 500

**Raghavendra Gadagkar**

Centre for Ecological Sciences and Centre for Contemporary Studies, Indian Institute of Science, Bangalore

### **War and Peace: conflict and cooperation in an insect society**

Some species of insects such as ants, bees and wasps organize themselves into colonies with social organization and integration, division of labour and caste systems that parallel if not better human societies. The rules governing the workings of such insect societies are of obvious interest to us. Gadagkar's team has spent many years studying and understanding the workings of one such tropical wasp society. Their motivation for studying these insect societies is similar to that of an anthropologist studying other human societies - the goal is not to imitate them or to justify our own behaviour but instead to reflect on how we conduct our affairs. One of the most interesting findings is that these wasps are extremely aggressive to, and highly intolerant of, other members of their species which do not belong to their colonies. However, the wasps are highly tolerant of each other and display almost no aggression to colony members even when there is considerable conflict. The lecture will describe and contrast such "war" towards foreigners and "peace" with insiders and also illustrate the research methodology that permits an understanding of these insect societies.

Raghavendra Gadagkar obtained his Ph.D. in Molecular Biology from the Indian Institute of Science, Bangalore, where he has established an active school of research in the area of animal behaviour, ecology and evolution. Gadagkar is also professor at the Centre for Ecological Sciences, Indian Institute of Science Bangalore and non-resident Permanent Fellow of the Wissenschaftskolleg, Berlin. He has published over 250 research papers and articles and two books, entitled *Survival Strategies* and *The Social Biology of Ropalidia*, both published by Harvard University Press. He is an elected Fellow of the Indian National Science Academy, the Academy of Sciences for the Developing World (TWAS) and Foreign associate of the National Academy of Sciences, USA. As founder Chairman of the Centre for Contemporary Studies, Gadagkar has initiated a new experiment that brings together different disciplines in the human sciences, such as philosophy, sociology, economics, law, literature, poetry, art, music, cinema etc. and aims to forge meaningful interaction with the natural sciences.

<http://www.esof2010.org/schedule/2/5ka>



## Keynote Talk

5 July, h. 17.15 - 18.00, Auditorium

**Tecumseh Fitch**

Department of Cognitive Biology, University of Vienna

### **Science at the interfaces: the biology of music and language**

In the last decade, exploring questions about the evolution of human language has gone from being scientifically disreputable to one of the "hot topics" in current psychology and biology. It has not been uncommon for scientists to switch track and become interested in this new and exciting field. As a matter of fact, Fitch was one of them – after undergraduate training and research as a biologist, he went on to do a PhD in cognitive and linguistic sciences, and then a post-doc in speech & hearing sciences. He was thus able to explore some neglected corners of the field and make some surprising discoveries about similarities between human and animal communication. More recently, the new interdisciplinary area of "biolinguistics" has emerged, incorporating linguists, psychologists, speech scientists, and biologists. Fitch, who has done some significant work in the field, will discuss positive and negative outcomes of this approach. Looking forward, we will also see what the budding new field of biomusicology has in store for the future, in terms of enriching our understanding of human music. While such interdisciplinary work is not for the faint of heart, biolinguistics and biomusicology are fascinating and exciting fields, rich with open questions and unexplored avenues for research.

William Tecumseh Fitch (born in 1963 in Boston) currently teaches at the University of Vienna. He studied biology, linguistics and cognitive sciences at Brown University and obtained a postdoctoral position at Harvard University. His current research interests are the evolution and neural basis of cognition and communication; biolinguistics; physiology and perception of vertebrate vocalization (including human speech); the evolution of animal communication systems, including speech, language and music; auditory display of data; aesthetics. In addition to his academic work, Dr. Fitch has lectured to popular audiences, and his articles have been featured in many newspapers and magazines including the New York Times, the Guardian, Der Spiegel, Le Monde, and The New Yorker.

<http://www.esof2010.org/schedule/1/5kb>



## Keynote Talk

5 July, h. 17.15 - 18.00, 500

**Andrea Ferrari**

Department of Engineering, University of Cambridge

### Carbon nanotechnology

Carbon-based materials play a major role in today's science and technology. Carbon is a very versatile element, which can crystallise in the form of diamond or graphite. Great excitement has followed the discovery of new forms of carbon, including fullerenes, nanotubes and single layer graphene. This fuels the enormous amount of research in the ever-growing field of nanotechnology. In recent years, there have been continuous important advances in the science of carbon such as chemical vapour deposition of diamond, the discovery of fullerenes and carbon nanotubes, and the production of isolated single layer graphene. There are also many non-crystalline carbons, known as amorphous carbons and nanostructured carbons (mixture of amorphous and graphitic carbon, nanotubes and fullerenes). Diamond-like carbons play an important role, being a key element in numerous everyday-life applications, in the information technology, telecommunications and automotive market. Their great versatility arises from the strong dependence of the physical properties on the ratio of sp<sup>2</sup> (graphite-like) to sp<sup>3</sup> (diamond-like) bonds. We will review the main deposition methods, characterisation techniques and applications of graphene, nanotubes and diamond-like carbons.

Andrea C. Ferrari earned a PhD in electrical engineering from Cambridge University, after a degree in nuclear engineering from the Milan Polytechnic in Italy. He is the head of the Nanomaterials and Spectroscopy group at the Department of Engineering and Nanoscience Centre of Cambridge University. He is a University Reader in Nanotechnology, a Royal Society University Research Fellow and a Fellow of Pembroke College, Cambridge. His research interests include nanomaterials growth, modelling, characterization and devices. In particular, he focuses on graphene, nanotubes, diamond-like carbon, and nanowires for applications in electronics and photonics. He has published over 200 papers and given over 130 invited presentations to international conferences.

<http://www.esof2010.org/schedule/2/5kb>



## Keynote Talk

6 July, h. 12.00 - 12.45, 500

**Mohammed Hassan**

Executive Director, The Academy of Sciences for the Developing World (TWAS),  
Trieste

### **Global partnership to promote excellence in scientific research and education for sustainable well-being in Africa**

This lecture will highlight a number of key issues that African countries and their global partners should address to promote S&T-based development in the continent. These are the fact that African school education and universities must be reformed, that African institutions must build and sustain scientific centres of excellence and that institutions in Africa and other developing countries must learn to share successful experiences in the application of science and technology to address critical social and economic needs. Also, the international community must help bolster merit-based science academies in Africa. African countries must follow the path of other countries in establishing and supporting science foundations that provide merit-based, competitive grants to young scientists and research teams. Finally, Africa and its global partners must collaborate in building science centres and science museums as important institutions for bringing science to the public and promoting scientific awareness and public understanding of science.

Born in Elgetina, Sudan, in 1947, Hassan is executive director of the Academy of Sciences for the Developing World (TWAS), president of the African Academy of Sciences (AAS) and Co-Chair of the InterAcademy Panel (IAP). After obtaining his DPhil at the University of Oxford in 1973, he returned to Sudan as professor and dean of the School of Mathematical Sciences at the University of Khartoum. Since 1986 he has been working in Trieste, first as executive secretary and then as executive director of TWAS. His research interests include plasma physics and environmental modelling of air pollution and soil erosion in drylands. He received the Comendator, Grand Cross, and National Order of Scientific Merit, Brazil; and Officer, Order of Merit of the Italian Republic. His membership includes: Fellow, TWAS; founding fellow, AAS; fellow, Islamic World Academy of Sciences; honorary member, Academia Colombiana de Ciencias Exactas, Físicas y Naturales; corresponding member, Académie Royale des Sciences d'Outre-Mer, Belgium; foreign fellow, Pakistan Academy of Sciences; honorary member, Palestine Academy of Science and Technology; and founding member, Academy of Sciences of Lebanon.

<http://www.esof2010.org/schedule/2/6ka>



## Keynote Talk

6 July, h. 17.15 - 18.00, Auditorium

**Vladimir Kutcherov**

Royal Institute of Technology

### **The "end of the beginning" of the petroleum era**

The oil and gas industry has become a global branch of the world economy, an important political and economic factor of our civilization. At this time, there is no alternative source of energy which could be able to compete with hydrocarbons for availability, abundance, efficiency, and safety. However, one may hear apocalyptic prophecies wailing about a supposedly-imminent approach of the end of a petroleum era; such prophecies are universally accompanied by appeals to repent our sins of using oil and gas, and to operate our industrial societies by energy from wind farms, photovoltaic power, etc. Contrarily, scientific considerations about the genesis of hydrocarbons provide an understanding of the presence of enormous, inexhaustible resources of hydrocarbons

The concept of the abyssal abiogenic origin of petroleum which has been developed during the last 50 years in Russia and Ukraine recognizes that petroleum is a primordial material of deep origin which has migrated into the crust of the Earth. The main goal of this presentation is to provide convincing arguments from both laboratory experiments and geological data supporting the theory of abyssal, abiogenic petroleum origin and to show that this theory allows us to apply a new approach to methods for petroleum exploration, oil and gas formation, to re-examine the structure, size and location of the potential world oil and gas resources, and to develop a completely new scenario of energy production in the XXI century.

Vladimir Kutcherov obtained a Master of Science and a Ph.D. in Technical Sciences at the Russian State University of Oil and Gas. He held various academic positions in Russia and then became professor at the Energy Department of the Royal Institute of Technology in Sweden. He was International Expert of NorForsk program, and INTAS and TEMPUS projects coordinator. Kutcherov is a well known champion of the controversial theory of the abiotic deep petroleum origins, according to which petroleum is a primordial material of deep origin which has erupted into the crust of the Earth: it is not a "fossil fuel" and has no intrinsic connection with any biological detritus in the sediments.

<http://www.esof2010.org/schedule/1/6kb>



## Keynote Talk

6 July, h. 17.15 - 18.00, 500

**Marie-Pierre de Béthune**

Vice-President Scientific Affairs at Tibotec and Senior Scientific Expert, Johnson and Johnson Corporate Office of Science and Technology (COSAT)

### **Old and new challenges in the discovery and development of drugs to treat infectious diseases.**

Already at the beginning of the 20th century, Nobel Prize winner Paul Ehrlich advocated the use of combination therapy to treat infectious diseases, in order to prevent the emergence of resistant pathogens, and to achieve what he called *therapia sterilisans magna*. One century later it appears we have not listened carefully to this enlightened advice: multi-drug resistance has become a major obstacle to the treatment of viral, bacterial, fungal, and parasitic infections. Treatment of HIV infection is no exception to this observation. Moreover, treatment needs to be life-long, as the infection cannot be cured, and side effects of medications, as well as inconvenient intake schedules and high pill burden, are hampering adherence to therapy, resulting in failure and the emergence of resistance.

At a time when only 3 antiretroviral drugs were available, our team embarked on a programme aiming to identify new drugs that would retain activity against multi-drug resistant HIV. We implemented a multi-disciplinary approach and improved formulations to decrease pill burden. As a result, we succeeded in gaining regulatory approval for two new antiretroviral drugs, darunavir and etravirine, to treat patients infected with multi-drug resistant HIV. Moreover, we studied the combination of those two drugs in Phase III clinical trials, the results of which demonstrated once more that Ehrlich's visionary advice holds true over the years.

Marie-Pierre de Béthune trained as a biologist at the Catholic University of Louvain (Belgium), with a thesis on resistance to antibiotics. After a postdoc in molecular biology, she joined Medgenix, a Belgium-based biotech start-up, where she founded and led the virology department. In 1994, she was hired as the first employee at the biotech start-up Tibotec, where over the last 15 years she has successively led the discovery, the clinical candidate selection, and the clinical virology of darunavir (PREZISTA), an HIV protease inhibitor, etravirine (INTELENCE), the first HIV-1 NNRTI to show clinical efficacy in patients with NNRTI-resistant viruses, and TMC278, another NNRTI, currently in Phase III studies. In 2008, she took the position of Vice-president for Scientific Affairs, Infectious Diseases. In this role, she explores the possibilities and opportunities for academic collaboration in private/public partnerships. Recently, de Béthune combined her position at Tibotec with the role of Senior Scientific Expert at the Johnson and Johnson Corporate Office of Science and Technology (COSAT). She is the author of more than 150 publications and presentations in the fields of antibiotics and HIV research.

<http://www.esof2010.org/schedule/2/6kb>



## Keynote Talk

7 July, h. 12.00 - 13.00, Auditorium

**Serge Feneuille**

Former chairman of the High Council for Science and Technology

### **Revisiting the past of a scientific career to build future scientific careers**

Starting from his own experience, the speaker will try to understand why scientific careers appear today much less appealing than in the 1960s, when he was a young man. For this purpose, he will go beyond trivial effects related to the social environment. More precisely, he will analyze the dominant representations of science and technology in our post-modern societies as well as some new practices of scientific communities which can divert a young student from scientific research or convince a mature scientist to leave it. Power games, lack of poetry and absence of metaphysical implications in present science appear to be key factors of explanation for these retreat phenomena. This pessimistic conclusion could appear as a pure consequence of the usual nostalgia which invades the elderly when they speak about their past life, but it is not the case as far as the speaker concerned. His objective is only to issue a call to arms to fight against obscurantism and intellectual decline. It is also a call to fight in favour of beauty, of culture and especially of poetry. Science and humanities are in the same boat. They will be saved from the wreck by the same struggle. If they still believe in a future for humanity which is not to be a new totalitarianism or a global society purely devoted to consumerism, scientists as well as educated people should participate in this battle.

Born in France in 1940, Serge Feneuille graduate from École Normale Supérieure de Saint-Cloud, and he was awarded a PhD in Physical Sciences in 1967. From 1969 to 1981 he pursued an academic career, becoming head of a major research laboratory working in the field of quantum optics and atomic physics. In 1981 he joined Lafarge Coppée (a company producing building materials), where he became Managing Director of Research. In 1986 he left the private sector to preside over the Centre national de la recherche scientifique, but two years later he returned to Lafarge Coppée, where he was nominated Executive Vice-president. Retired and free from any professional activity since 2001, Serge Feneuille served from 2006 to 2009 as chairman on the High Council for Science and Technology, a new body created by the President of France. Since 2002, he has been participating as an unpaid member of two archaeological teams excavating in Egypt and Sudan. He has published two books and a contribution to a collective book on ancient Egyptian literature.

<http://www.esof2010.org/schedule/1/7ka>



## Keynote Talk

7 July, h. 12.00 - 13.00, 500

**Sam Auinger**

Experimental Sounddesign, UDK Berlin

### Toward a hearing perspective

**Bruce Odland**

O+A

Since the Renaissance we have had an agreed visual perspective, and language to speak accurately about images. This we still lack in the world of sound, where words fail us to describe for instance even the complex waveforms of an urban environment, much less what those sounds do to us and how they make us feel.

For over 20 years, O+A have made the chaotic soundscapes of urban culture perceivable as music and as environments in public art installations around the world. Now they go further by asking us all to listen to and find meaning in the cultural waveform – that vast waste stream of unintentional sounds produced by fossil-fuelled culture that we normally spend so much effort shutting out. Using examples from their work, they will take the audience on a journey through the failed "sonic commons" on a search for information hidden in the cultural noise. They propose that after centuries of pursuing the implications of a visual perspective it is time to take steps toward a "hearing perspective" of the world we live in.

Sam Auinger ([www.samauinger.de](http://www.samauinger.de)), sonic thinker, composer and sound-artist, is guest professor at UDK Berlin, running the department of Experimental Sounddesign at the Master's Program in Sound Studies. Together with Bruce Odland he founded O+A in 1989 ([www.o-a.info](http://www.o-a.info)). Auinger is also a founding member of stadtmusik ([www.stadtmusik.org](http://www.stadtmusik.org)), which deals with sound in cities by analysing sound structures which are triggered by urban buildings and facilities. He was recently nominated "city sound artist" of Bonn, an award given for the first time.

Bruce Odland, sonic thinker, composer, and sound artist, is internationally known for large scale, public space sound installations with Sam Auinger (O+A) which transform city noise into harmony in real-time, changing the sonic identity of public spaces around the world. His many collaborations with artists such as Laurie Anderson and his work in film, radio, museums and theatre has won numerous awards. Sounds from the Vaults, a playable orchestra of virtual instruments for the Field Museum in Chicago, won the Gold Muse Award for interactivity from the Association of American Museums. He is currently co-directing a sound park on the Novartis Campus in Basel with Laurie Anderson, composing a major work named Saga and preparing a tour of the Requiem for fossil fuels.

<http://www.esof2010.org/schedule/2/7ka>



## The state of the art of quantum mechanics: Basics and applications

3 July, h. 09.00 - 11.45, 500

### Gerard 't Hooft

Institute for Theoretical Physics, University of Utrecht, The Netherlands

Quantum mechanics, discretization and local determinism

### Marisa Dalla Chiara

University of Firenze, Italy

How quantum information has challenged and changed logical semantics

### Augusto Garuccio

University of Bari, Italy

Local realistic models

### Gian Carlo Ghirardi

University of Trieste, Italy

Dynamical reduction models

### Nino Zanghi

University of Genova, Italy

The de Broglie-Bohm model

### Heinz Dieter Zeh

University of Heidelberg, Germany

The decoherence model

Quantum mechanics represents nowadays one of the pillars of modern physics: so far a huge amount of theoretical predictions deriving from this theory has been confirmed by very accurate experimental data, while the theory is at the basis of a huge spectrum of researches going from solid state physics to cosmology, from bio-physics to particle physics. Furthermore, in the last years the possibility of manipulating single quantum states has fostered the development of promising quantum technologies as quantum information (calculus, communication, etc.), quantum metrology, quantum imaging etc. Nevertheless, many problems related to the foundations of this theory persist, like non-local effects of entangled states, wave function reduction and the concept of measurement in quantum mechanics, the transition from a microscopic probabilistic world to a macroscopic deterministic world described by classical mechanics (macro-objectivation) and so on. Problems that, beyond their fundamental interest in basic science, now also concern the impact of these developing technologies.

In this session, some of the most important personalities in the field will debate different opinions on these problems presenting the present status of the art of the interpretation of quantum mechanics and outlining the lines of development of these studies.

### Organiser

Marco Genovese

National Institute of Metrological Research (INRIM), Italy

### Moderator

Marco Genovese

National Institute of Metrological Research (INRIM), Italy

<http://www.esof2010.org/schedule/1/4a>



## Of genes and bodies: Developmental perspectives in vertebrate evolution

3 July, h. 09.00 - 10.15, Londra

### **Ann Burke**

Wesleyan University, USA

Development and evolution of the musculoskeletal system of vertebrates

### **Shigeru Kuratani**

RIKEN Center for Developmental Biology, Japan

Turtle shell development and evolution

### **Filippo Rijli**

Friedrich Miescher Institute for Biomedical Research, Switzerland

Molecular mechanisms of craniofacial development

The field of evolutionary developmental biology has traditionally striven to explain the evolutionary diversity of animals by focusing on molecular-level changes in developmental mechanisms. But the tendency has been to look at embryo-wide patterns known as body plans, which differ only at very broad taxonomic levels, such as phyla. This wide-view approach, however, does not fully address some of the best-known evolutionarily-determined innovations, such as the giraffe's neck, the elephant's trunk, or the bat's wing, which are much more specific in terms of both the taxa and the anatomic structures involved. This is not to say that such questions are beyond the scope of molecular genetics, but rather that, by focusing on the cellular and molecular levels, modern developmental biology is too often uninformed by a solid grasp of comparative gross anatomy. In this session, we will highlight some of the connections between developmental changes at the molecular level and changes in the anatomical organization in vertebrates over evolutionary time.

### **Organiser**

Naoki Namba

RIKEN Center for Developmental Biology, Japan

### **Moderator**

Elisabetta Tola

Formicablu, Italy

<http://www.esof2010.org/schedule/1/4a>



## Scientific rationality and policymaking: Making their marriage work

3 July, h. 09.00 - 10.15, Istanbul

**Panayotis Gavras**

Department Head, the Black Sea Trade and Development Bank (BSTDB),  
Thessaloniki, Greece

**Paolo Blasi**

University of Firenze, Italy

**Ignacio Zubiri**

University of the Basque Country, Spain

In a climate of deep recession and profound revisiting of principles and worldviews, the relationship between science and policymaking assumes ever greater importance. Can it be “improved” and how? What would serve as indicators of “improvement”? These questions are both pertinent and far from trivial, as was shown in recent cases with global repercussions (recall the belated debate on the link between biofuels and food prices as food riots broke out in 2007-08, or the cavalier use by both banks and regulators of financial risk management based on 70s models and the normal distribution, which does not fit the data!). In this revisiting one should emphasise the role and future of universities, which provide a key platform for the science-policymaking interaction, furnishing advice, receiving funding, enshrining views and passing them on.

The panel combines strong academic, university leadership, and policy experience, and will provide a well-rounded discussion of the issues at hand.

### Organiser

David Merino

European Commission - Joint Research Centre (JRC), EU

### Moderator

Dimitris Kyriakou

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Sustainable nuclear energy in the 21st century: Challenges for the fuel cycle

3 July, h. 09.00 - 10.15, Madrid

### Sunil Felix

Commissariat à l'Energie Atomique (CEA), France

How new reactors can contribute to solve the problem of nuclear waste

### Tadashi Inoue

Central Research Institute of Electric Power Industry (CRIEPI), Japan

The minor actinide challenge

### Joseph Somers

European Commission - Joint Research Centre (JRC), EU

Properties and behaviour of advanced nuclear fuels

If nuclear energy has to contribute to the fulfilment of growing energy needs and to the diversification of energy sources, an optimized sustainable use of nuclear fuel has to be implemented. The most recurrent issue of concern expressed by the public with respect to nuclear energy is the safe disposal of long-lived, highly radioactive waste. In this context, the new concepts of nuclear reactors and related fuels aim at solving and/or minimizing issues associated with the current nuclear energy production technology, such as the quantity and life-time of high level waste. Achieving this poses significant challenges in terms of nuclear reactor and fuel design and fabrication, experimental characterization and modelling of the fuel behaviour.

### Organiser

Angelgiorgio Iorizzo

European Commission - Joint Research Centre (JRC), EU

### Moderator

Peter Rullhusen

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Advancing science in developing countries

3 July, h. 09.00 - 10.15, Roma

### **Mohammed Hassan**

The Academy of Sciences for the Developing World (TWAS), Italy

Discussant

### **Vincenzo Lipardi**

Fondazione IDIS-Città della Scienza, Italy

Science communication and education as a key instrument for the empowerment of people in developing countries

### **Melchor Sanchez de Toca y Alameda**

Pontifical Council for Culture, Vatican City

Can science and religion advance together in order to improve development?

We are facing an almost unprecedented economical crisis, which is questioning our model of production and consumption, and our faith in the ability of science and technology to cope with the ongoing challenges that humanity faces due to its impact on the planet. Promoting the advancement of knowledge and human endeavour based on scientific principles is a priority everywhere, but this is particularly true in the case of developing countries. Science is the most effective tool in the struggle for the reduction of poverty. It constitutes an essential basis for the empowerment of people, for socio-economic development and for the improvement of the quality of life in any continent.

In this session we will point out the key role of science culture and science education in developing countries as a priority for building democratic knowledge societies. In particular, we will explore this possibility in an open minded approach valorising the knowledge of local cultures and rethinking – with a post colonialist approach – the meeting between traditional knowledge and western science; encourage scientific culture in developing countries, respecting diversity and strengthening cooperation and experience-sharing in the various fields of scientific culture; showcase a project aimed at the development of a science centre in Nigeria, promoted by IDIS and the Vatican City and based on a intercultural exchange between Italy and Nigeria.

### **Organiser**

Anne-Marie Bruyas

Fondazione IDIS-Città della Scienza, Italy

### **Moderator**

Lidia Brito

UNESCO, France

<http://www.esof2010.org/schedule/1/4a>



## Dietary polyphenols: what is their role in combating chronic disease?

3 July, h. 09.00 - 10.15, Atene

**Maria Benedetta Donati**

Catholic University, Campobasso, Italy

**Chiara Tonelli**

University of Milan, Italy

**Marie-Claire Toufektsian**

Université Joseph Fourier - Grenoble, France

The Grand Challenge of chronic non-communicable diseases is poorly recognized, but its severity and the economic burden it will place on societies over the next 50 years are enormous. A significant proportion of chronic diseases can be prevented by reducing socio-behavioral risk factors, increasingly the most significant of which is unhealthy diet.

We have expanded fundamentally the understanding of how polyphenols can promote health and prevent chronic disease through diet. Success was due to the fact that: our research was publicly funded, focusing on foods that were most nutritionally relevant to European consumers rather than pushed by commercial agendas; we used isogenic food materials, allowing precise assignment of health-promoting effects to specific polyphenols in a food context; we used animal models of disease as “black boxes” to assess the efficacy of phytonutrients supplied in foods avoiding complications associated with bioavailability, metabolism or dosage.

Our research is already impacting dietary recommendations and messages in the popular press. However, our progress marks only the foundations of the understanding required for the role of dietary polyphenols in promoting health and combating chronic disease. Investigations need to be extended so understanding can be translated into accurate dietary recommendations and preventive medicine strategies.

### Organiser

Cathie Martin

John Innes Centre, UK

### Moderator

Cathie Martin

John Innes Centre, UK

<http://www.esof2010.org/schedule/1/4a>



## Informing and engaging citizens on climate change issues

3 July, h. 09.00 - 10.15, Dublino

### **Bruna Valettini**

Acquario di Genova, Italy

European projects: A link between researchers and large public on climate change issues.

### **Giuseppe Pellegrini**

Observe - Science in Society, Italy

ACCENT project: Involving experts and citizens on global warming debate

### **Walter Staveloz**

Association of Science-Technology Centers (ASTC), USA

IGLO International action on global warming

Climate change issues are clearly a growing concern for the public today. In recent years, people have received a great deal of information from media on the causes and consequences of climate changes, but – depending on countries and regions – the understanding of citizens and their engagement in these topics is still varied. Communication professionals are making effort to communicate the messages correctly. This panel session proposes to contribute to a global effort to develop news tools and actions on climate change from “informative” to the “active” procedures through the exchange and dissemination of practices that involve citizens in actions and dialogue.

The session will tackle with the complexity of public communication due to the huge amount of scientific data and the interaction of numerous fields of interest, from the local to the global level. Concerning “active procedures”, new methods – hand-on exhibitions, participative games, local citizens forums and many others– used by the science centres find ways for the public to be effectively engaged in such issues. Changing people’s behaviour – as consumers and as citizens – is notoriously difficult, but many social change campaigns have been wildly successful.

The central issue in this session is to better understand and facilitate the two-ways communication channels between the scientific community and the public. Specific attention will be given to the development of communication tools, fostering a correct and clear information to the non-expert public.

### **Organiser**

Ilenia Picardi

Fondazione IDIS-Città della Scienza, Italy

### **Moderator**

Luigi Amodio

Fondazione IDIS-Città della Scienza, Italy

<http://www.esof2010.org/schedule/1/4a>



## Anticipatory governance of emerging technologies: Foresight, engagement and integration

3 July, h. 09.00 - 10.15, Copenhagen

### Ulrike Felt

Department of Social Studies of Science, University of Vienna, Austria

Making futures present: On the co-production of nano and society in the Austrian context

### Erik Fisher

CSPO, Arizona State University, USA

Socio-technical integration research: Embedding social scientists in natural science and engineering laboratories

### Matthew Kearnes

Durham University, UK

Upstream public engagement: Building social intelligence into nanoscale science and engineering research

Nanotechnologies and other emerging technologies challenge existing institutions of governance because they: 1) contribute to novel and unpredictable, yet potentially revolutionary, innovations; 2) develop in uncertain ways in conjunction with dynamic public attitudes; and 3) require hard-to-develop collaborations between scientists and engineers on the one hand, and social scientists and humanists on the other, to develop crucial knowledge and wisdom.

“Anticipatory governance” is designed to build broad societal capacities to address these challenges through: 1) foresight activities to extend our socio-technical imaginations to plausible future nanotechnologies; 2) engagement activities to elicit detailed perspectives from publics on their hopes, fears, and expectations of nanotechnologies; and 3) integration activities to generate more reflexive decision making among all expert participants. This panel provides an overview of anticipatory governance and develops examples of foresight, engagement, and interaction in a variety of international contexts.

Barben, D., E. Fisher, C. Selin and D.H. Guston. 2008. “Anticipatory Governance of Nanotechnology: Foresight, Engagement, and Integration.” *The Handbook of Science and Technology Studies*, Third Edition. Eds., E.J. Hackett, O. Amsterdamska, M. Lynch and J. Wajcman, 979-1000. Cambridge, MA: MIT Press

Guston, D.H. 2008. “Innovation Policy: Not Just a Jumbo Shrimp.” *Nature* 454: 940-41.

### Organiser

David Guston

Consortium for Science, Policy & Outcomes, USA

### Moderator

David Guston

Consortium for Science, Policy & Outcomes, USA

<http://www.esof2010.org/schedule/1/4a>



## From disease management to health management: Population studies and their role in prevention

3 July, h. 10.30 - 11.45, Auditorium

### **Pauline Mattsson**

Karolinska Institutet and Technopolis, Sweden

The economy of being healthy - findings related to the socio-economic impact of BBMRI-a pan-European network of biobanks

### **Rudolf Kaaks**

German Cancer Research Center, Germany

The European prospective investigation into cancer and nutrition (EPIC): Major findings relating lifestyle, metabolism and genetics to cancer risk

### **Erich Wichmann**

Helmholtz Zentrum München and German Research Center for Environmental Health, Germany

Large cohort studies for the early detection of cardiovascular and metabolic diseases: Findings from 25 years of the KORA study

### **Paul Burton**

Leicester University, UK

Biobanking in the UK

Demographic change and an ageing population will most likely lead to a change in disease patterns and shift the illness profile from acute care towards the management of chronic illnesses. Chronic and slowly progressive diseases such as diabetes, dementia and cancer cause a large direct and indirect economic burden across Europe. The research involved in population surveys and biobanking can help understand interactions between genes, the environment, lifestyle and disease, and then translate that knowledge into clinical practice quickly through innovative diagnostics, therapeutics and preventive treatment strategies. Through the genetic assessment of both healthy and disease-specific biospecimens obtained from biobanks, the potential for personalized medicine is becoming realized.

Other expectations are related to the economic benefits of biobanks both boosting the national or regional biotechnology and pharmaceutical sector. There has been an increasing demand to study the costs related to the maintenance of biobanks e.g. storage, anonymization, consent and ethics. Yet very little information is currently available on the actual costs entailed.

The Helmholtz Association has long experience in large scale studies such as EPIC and CORA. It is now working on a newly launched national cohort study, which will observe 200,000 healthy men and women for a period of 10-20 years. The goal of the study will be to illuminate the causes of common health problems like cardiovascular disease, cancer, diabetes and dementia, as well as to identify risk factors and effective methods of prevention. Such studies have also been conducted in other European countries and have led to changes/better treatment of diseases at an early stage.

### **Organiser**

Effrosyni Chelioti

Helmholtz Association, Germany

### **Moderator**

Clive Cookson

The Financial Times, UK

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## Understanding and predicting functional responsiveness to physical activity in humans: a systems biology approach

3 July, h. 10.30 - 11.45, Londra

### **Carl Johan Sundberg**

Karolinska Institutet, Sweden

Regular physical activity prolongs life and improves quality of life and physical health

### **Claude Bouchard**

Pennington Biomedical Research Center, USA

Evidence for genetic component to sedentary time, physical activity level and cardiorespiratory fitness

### **Jamie Timmons**

RVC, University of London, UK

Variation in responsiveness to exercise training: genomic level measurements provide new insights

Cardiovascular disease, obesity and diabetes are – in part – lifestyle dependent diseases, and constitute a main healthcare burden. Low aerobic capacity is one of the strongest risk factors for development of cardiovascular disease and premature death in mammals. Exercise, the sole strategy for increasing aerobic capacity in humans, affects many organs and tissues in a beneficial way. The adaptations are mediated through various changes in tissue environment which influence protein modifications and gene expression. Regular physical activity in humans affects the activity (mRNA copy number) of around 1000 genes and several RNA interference mechanisms which through complex networks regulate adaptation.

Still, training is ineffective in a significant number of people. The molecular governors of a low or high propensity for aerobic capacity adaptation are unknown, and population genetics alone has not easily resolved the genetic variants that quantitatively contribute to cardiorespiratory adaptation. In this session, genetic, epigenetic and genomic findings that can explain parts of the inter-individual variation will be discussed. These approaches to identify high- and low-responders will be discussed in the larger context of “personalised medicine”. Finally, the possibility that variations in responsiveness to life style interventions play a role for health outcomes and the risk for premature death will be discussed from health care system and ethical perspectives.

### **Organiser**

Carl Johan Sundberg

Karolinska Institutet, Sweden

### **Moderator**

Carl Johan Sundberg

Karolinska Institutet, Sweden

<http://www.esof2010.org/schedule/1/4a>



## Are science journalists too tame to be a watchdog?

3 July, h. 10.30 - 11.45, Madrid

### Patrick Imhasly

Neue Zuercher Zeitung am Sonntag, Switzerland

Are we good enough to handle professionally attempts of “agenda setting” by scientific institutions?

### Hans Peter Peters

Forschungszentrum Juelich, Germany

Science PR is both necessary and legitimate, but it must be counterbalanced by strong science journalism

### Don Powell

Wellcome Trust Sanger Institute, UK

Is journalism to tell stories – good or bad – about science? Should we lose the snobbery of “proper” journalism?

In the last few years, two parallel trends have emerged, which threaten the independence of science journalism: the workload of journalists has increased significantly and public information offices have been enlarged. Today, press releases often constitute well written accounts of scientific results, including quotes and pictures. This gives journalists the opportunity to generate science features without putting in much effort of their own. However, not infrequently, the material is used without mentioning the source and without checking the claims being made. This undermines the standards of the trade. According to the professional self-image of science journalists, science journalism is not designed to foster acceptance of science, but rather to analytically examine scientific progress and present the findings to a non-specialist audience. The WPK, the German Science Journalists' Association, would like to initiate a discussion between scientists, press officers and journalists on the issues surrounding communication between the professional domains.

### Organiser

Lynda Lich-Knight

German Science Journalists' Association (WPK), Germany

### Moderator

Alexander Maeder

Stuttgarter Zeitung, Germany

<http://www.esof2010.org/schedule/1/4a>



## Another eye in the sky? What kind of security can we expect from the EU's satellite based Global Monitoring System GMES?

3 July, h. 10.30 - 11.45, Roma

**Stephan Lechner**

European Commission - Joint Research Centre (JRC), EU

**Richard Bamler**

DLR, Germany

**Jane A. Rovins**

Chinese Academy of Science, China

**Nikola Kolev**

Agricultural Academy of Bulgaria, Bulgaria

The EU's Global Monitoring for Environment and Security (GMES) system shall provide the basis for sustainable spaceborn services in the environmental and the security area - so what do we have to expect from GMES on security? Will we all be monitored and traced from the sky in the future? Will crime only occur in cloudy nights? What is meant if satellite imagery experts talk about "real-time monitoring"? And can't we get it all from Google Earth?

The session will address the GMES policy impact in security as well as social concerns against "being monitored for security". It will give insight to the technical status of satellite imagery analysis for GMES, into the civil security areas that technically could evolve for Global Monitoring and into the dynamics of controls with remote sensing based on some examples (such as border security, maritime surveillance or detection of illegal activities).

Answers will be provided on the current and future capabilities of civil satellite sensors, covering optical and radar technologies. Recent results (inter alia from the European Commission's Joint Research Center) will assure that there is an up-to-date information also on the data analysis and data fusion side. The session will include two regional perspectives, namely the south-east European and the international / global.

### Organiser

Stephan Lechner

European Commission - Joint Research Centre (JRC), EU

### Moderator

Patrick Cunningham

Chief Scientific Adviser to the Irish Government, Ireland

<http://www.esof2010.org/schedule/1/4a>



## The role of networks in shaping urban and territorial policies

3 July, h. 10.30 - 11.45, Dublino

### Jacques Levy

Ecole Polytechnique Federale de Lausanne, Switzerland

Places, areas and networks

### Oriol Nel-lo

Generalitat de Catalunya, Spain

Reshaping territorial policies

### Piero Gastaldo

Compagnia di San Paolo, Italy

Potential territorial outcomes of network policies

The metaphor of Network is currently one of the most popular ways of describing our contemporary society. Thanks to the employment of modern information technologies, in particular "internet" and "telecommunication networks", people, private and public actors and places are in relationship worldwide. Networks can ignore boundaries, shorten distances, the "space of flows" goes side by side with the "space of places". However, although some analysts have even foreseen the coming of a "flat world", many signals give grounds for a different analysis: space is being deeply reshaped, geographical scales or levels are interlaced one another, underlining, thus, the strong relationships among actors and places. Therefore, it is important to highlight the quality and the effects of the relations among actors, territories and institutions. In particular the role of networks in shaping/influencing the urban and territorial policies.

All these processes raise many issues on which politicians, academics, representatives of "society" should be discussing: how do these networks interact with policies occurring at different territorial levels (local, regional, national)? how are they taken into account by policy makers? what are the network policies implemented or which need to be activated in order to increase the value of specificities and potentials of different territories? have these networks effects on real life, or are they just "representations"?

### Organiser

Costanzo Mercugliano

EU-POLIS - Dipartimento Interateneo Territorio - Polytechnic and University of Torino, Italy

### Moderator

Giuseppe Dematteis

EU-POLIS - Dipartimento Interateneo Territorio - Polytechnic and University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Why the hell should I become an academic scientist? A debate on visions and realities of careers and lives in science

3 July, h. 14.15 - 17.00, Auditorium

**Philip Campbell**

Editor-in-Chief, Nature, UK

**Ulrike Felt**

Department of Social Studies of Science, University of Vienna, Austria

**Marcela Linkova**

Institute of Sociology, Academy of Science, Czech Republic

**Helga Nowotny**

President, European Research Council (ERC), Austria

In European policy, initiatives to attract young people to scientific careers abound: visions of future lives in science are drawn as fascinating, rewarding and a good career choice. However, there are many indicators that for a considerable number of those who choose an academic scientific career, the circumstances they encounter do not measure up to these high expectations, as for example short-term contracts, long periods of reoccurring mobility and the partially fierce competition for academic positions with a more long-term perspective overshadow the fascination for science.

This session aims at opening an interdisciplinary debate on careers and lives in science. Its goals are: to engage perspectives of junior and senior scientists, policy makers and social scientists on visions and realities of careers and lives in science; to critically discuss the basic values guiding current career patterns in science; to scrutinise the role and responsibility of scientific institutions for shaping careers and providing perspectives; to compare how national and institutional contexts matter in shaping increasingly mobile and boundaryless careers; to ask for the motives which draw young people into science, as well as for the reasons why young scientists choose to leave academia to pursue different careers.

### Organiser

Maximilian Fochler

Department of Social Studies of Science, University of Vienna, Austria

### Moderator

Maximilian Fochler

Department of Social Studies of Science, University of Vienna, Austria

<http://www.esof2010.org/schedule/1/4a>



## When the final hour comes: End of life care, ethics, costs, and the role of the media

3 July, h. 14.15 - 17.00, 500

### **Alison Abbott**

Senior European Correspondent, Nature, Germany

How scientific journals may influence the end-of-life debate

### **Carlo Alberto Defanti**

Azienda Ospedaliera Niguarda Ca' Granda, Italy

The concepts of Brain death and Persistent Vegetative State: similarities and differences

### **Iona Heath**

President, Royal College of General Practitioners, UK

End of life "If it be not now, yet it will come"

### **Andrea Soddu**

Cyclotron Research Centre, University of Liege, Belgium

Measuring consciousness in coma and vegetative state

### **José María Valderas**

Editor-in-Chief, Mente y Cerebro, Spain

The end of life according to science communication journals

### **Penney Lewis**

School of Law and Centre of Medical Law and Ethics, King's College London, UK

European perspectives on legal and ethical issues in end of life care

### **Marina Verna**

La Stampa, Italy

Telling stories to catch attention

Advances in life sciences provide life-prolonging treatments that could stretch our life span beyond borders once unimaginable, but European countries are deeply split over how to treat terminally ill or non curable patients. The public debate is even more dividing and emotional when it comes to euthanasia and its legislation. These matters raise complex ethical, legal and practical questions. How do we define life and death and where's the dividing line? Who should decide for non-competent patients, like individuals on long-term coma? Should physicians always seek to prolong life? At any cost? These and other questions will challenge scientists, GPs, philosophers and the public during the first session of this event.

But a debate on these themes would not suffice without taking into account end of life narratives, since various surveys show that for European citizens TV and print media are still the main source of information about science related issues. Hence in the second session four European journalists and the audience will confront on a set of issues strictly related to the first ones. How is the public debate on end of life care framed? How do the media tell end of life stories? And what's the role of the media: to inform or to orient?

### **Organiser**

Emiliano Feresin

International School for Advanced Studies (SISSA), Trieste, Italy

### **Moderator**

Gianna Milano

Freelance journalist, Italy

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## Food allergies: Tracking the enemy within

3 July, h. 14.15 - 15.30, Londra

### **Franz Ulberth**

European Commission - Joint Research Centre (JRC), EU

Detecting food allergens: The best analytical tools for the job

### **Andrew Thomas Clark**

Addenbrookes NHS TRUST, United Kingdom

Taking on food allergies: A cure within our grasp?

### **Elizabeth Naomi Clare Mills**

Institute of Food Research, United Kingdom

Food allergies across Europe: latest results from a large collaborative project

### **Ronald Van Ree**

University of Amsterdam, Netherlands

Food allergies across Europe and Asia: Towards improved diagnosis and novel therapies

Around 2% of adults (and 8% of children) suffer from food allergies across the globe. For some, the intake of even small amounts of an allergen can cause serious health problems - some of which can be life-threatening. To date there is no effective treatment available. Science provides the basis for food safety, while legislation ensures that appropriate controls are made to protect consumers. Incidences of food allergies appear to be increasing, and some argue that consumer fear and avoidance of certain foodstuffs may actually feedback and contribute to this increase. The scope of this symposium will range from suitable analytical methodology for the detection of allergen traces to policy requirements, health issues and communication

### **Organiser**

David Anderson

European Commission - Joint Research Centre (JRC), EU

### **Moderator**

Krzysztof Maruszewski

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Particle physics research: Why does it matter?

3 July, h. 14.15 - 15.30, Istanbul

### **Tara Shears**

University of Liverpool, UK

Why are the leading industrialised nations engaged in particle physics research? What's going on?

### **Mark Lancaster**

University College London, UK

The benefits from particle physics experiments

### **Michelangelo Mangano**

European Organization for Nuclear Research (CERN), Switzerland

The future of particle physics research

The Large Hadron Collider (LHC) particle accelerator, at CERN, will offer a new level of understanding of matter and forces in the universe, including the search for the Higgs-boson, a.k.a. the God particle. Looking beyond 2010, when the LHC has become fully operational, there are a number of new particle accelerators under consideration, which will aim to probe the laws of nature and expand the frontier of particle physics research. This session aims to explore current European particle physics research activities, primarily focusing on the work that is scheduled to be undertaken at the LHC, but will also highlight the facilities that will be needed in 2020 and beyond. The challenging nature of particle-physics research has and continues to require paradigm shifts in the technical development of accelerators, sensors, microelectronics, data-acquisition methods, computing and analysis techniques. The session will also highlight the many economic and societal impacts that have arisen as a consequence of research in particle physics that is seeking to expand the boundaries of fundamental knowledge through large-scale, global, collaborative research.

### **Organiser**

Tajinder Panesor

The Institute of Physics, UK

### **Moderator**

Fernando Ferroni

The National Institute of Nuclear Physics (INFN), Italy

<http://www.esof2010.org/schedule/1/4a>



## From molecules to ecosystem: Applying genomics to environmental research

3 July, h. 14.15 - 15.30, Madrid

**Teresa Lettieri**

European Commission - Joint Research Centre (JRC), EU

**Guido Kopal**

Roche Diagnostics, Germany

**Aldo Viarengo**

University of Piemonte Orientale, Italy

Our environment is changing at increased pace mainly due to anthropogenic activities. Changes such as global temperature increase, CO<sub>2</sub> increase, and the emission of chemical pollutants could have deleterious effects on organisms, their communities, and ultimately on the health of ecosystems. In the past few years molecular biology techniques have revolutionised ecological research. The availability of inexpensive ways to genetically characterise individuals and species has allowed quantifying genetic diversity, tracking movement of individuals, characterising new species, and investigating interactions among the communities at ecosystem level.

One of these technologies is DNA microarray, which progressed rapidly in biological research for gene expression analysis. This analysis can also provide a global view of how organisms respond to stressors (such as chemical pollutants, UV light, temperature changes, etc.) and has a great potential role in discovering molecular biomarkers to anticipate the harmful effects of stressors in aquatic ecosystems. This will be an occasion for researchers to explain the role of molecular biology applied to environmental studies, and their contribution to understanding how the ecosystem will be affected by global change.

### Organiser

Teresa Lettieri

European Commission - Joint Research Centre (JRC), EU

### Moderator

Teresa Lettieri

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Science in a borderless world

3 July, h. 14.15 - 15.30, Parigi

**Suzanne Fortier**

Natural Sciences and Engineering Research Council, Canada

**Ernst-Ludwig Winnacker**

Human Frontier Science Program, France

Science has always been an international endeavour, with scientists freely exchanging information and attending meetings world-wide. However, largely triggered by new technologies and cultural globalization, internationalisation has entered into a borderless world. Today's science environment is characterized by the high mobility of researchers, a growing number of multi-sector international R&D partnerships, an increased number of multinational research facilities, and open access to publications and data. Global challenges, particularly in environment and health, highlight the importance of promoting and supporting partnerships that bring together talent and perspectives from across nations and disciplines. Meanwhile, the recent economic crisis faced by all nations has focused their attention on investment in S&T for their own prosperity and future.

The challenge is to build the flexibility and dexterity needed to participate in highly complex and dynamic R&D networks, while maintaining a balance between domestic and global interests. How can national research systems respond to these trends? What has been achieved? What opportunities need to be explored and promoted? How can funding agencies cooperate in responding to these challenges? How can international policy support both access to knowledge and protection of intellectual property? The session aims to address and discuss these questions, encourage discussion, and outline a course of action.

### Organiser

Suzanne Fortier

Natural Sciences and Engineering Research Council, Canada

<http://www.esof2010.org/schedule/1/4a>



## Making science understandable: Learning from agricultural extension

3 July, h. 14.15 - 15.30, Atene

**Pierre Labarthe**

National Institute for Agricultural Research (INRA), France

**Kristin E. Davis**

International Food Policy Research Institute (IFPRI), USA

**Catherine Laurent**

National Institute for Agricultural Research (INRA), France

**Ismail Moumouni**

Faculté d'Agronomie, Université de Parakou, Benin

**Moussa N'Dienor**

Institut de Recherche pour le Développement (IRD), Senegal

This interdisciplinary session will discuss the case of agricultural extension services. These services were created specifically to bridge science and society for farm production and environmental issues. They are linked to universities in many countries and lie in a long tradition of “popularisation” of scholarship from various disciplines, especially biotechnical sciences such as agronomy, animal husbandry, as well as other natural and social sciences. Extensive surveys and reviews show that several types of “bridges” are necessary to fully consider the time frame of action (design, implementation, assessment) and to contextualize the scientific knowledge in specific situations. In particular, they stress that the different groups of actors concerned with these situations (policy makers, farmers, researchers, etc.) have unequal capacities to access and use scientific knowledge, but that all of them need a clear picture on scientific production, and on the actual limits of the validity of the research outcomes. But the results of such research remain fragmented. Our goal is to put these reflections in a global and interdisciplinary perspective in order to discuss the types of meta-knowledge (models, levels of proofs, types of evidence, boundary objects, etc) that various stakeholders need in three different situations: management of innovation, implementation of new practices, and assessment of services.

### Organiser

Pierre Labarthe

National Institute for Agricultural Research (INRA), France

<http://www.esof2010.org/schedule/1/4a>



## Plants for sustainable food supply

3 July, h. 15.45 - 17.00, Londra

### **Pere Puigdomènech**

Instituto de Biología Molecular de Barcelona, CSIC, Spain

The state of the art

### **Chiara Tonelli**

University of Milan, Italy

Boosting sustainable crop productivity

### **Wilhelm Gruitsem**

ETH Zurich, Switzerland

Novel crops and novel traits

The Millennium Development Goals set in the 1990s aimed at reducing by half the number of undernourished by 2015, but it looks like they won't be achieved. The most probable scenarios of population growth predict a world population of 9 billion by 2050, living mostly in 400 megacities of more than 10 million inhabitants. In this context food security, food safety and food health appear as both essential and hard to achieve goals for agricultural production in the next future.

But present efforts to fulfill the need of food production may hinder adequate food availability for future generations, taking into account the effect of agriculture on soil and water use and pollution, and the way agriculture impacts climate change. Therefore, the sustainability of present practices is also important when taking decisions on agricultural policies. New important advances are being produced through the application of molecular genetics to plant biology including basic knowledge on plant productivity, resistance to pathogens or tolerance to adverse conditions. The availability of an increasing number of plant genomes, the analysis of the genetic basis of the variability of crop populations or new crops, and the genetic modification of plants provide tools that may help humankind in tackling this fundamental task.

### **Organiser**

Dorothee Bongaerts

European Plant Science Organisation (EPSO), Belgium

### **Moderator**

Metzlaff Karin

European Plant Science Organisation (EPSO), Belgium

<http://www.esof2010.org/schedule/1/4a>



## How do mathematics contribute to cancer modelling and healing therapies?

3 July, h. 15.45 - 17.00, Istanbul

### Vincenzo Capasso

University of Milan, Italy

Contribution of mathematics to cancer modeling and healing therapies

### Jean Clairambault

National Institute for Research in Computer Science and Control (INRIA), France

Cell proliferation, circadian clocks and molecular pharmacokinetics-pharmacodynamics to optimise cancer treatment

### Luigi Preziosi

Torino Polytechnic, Italy

The European research on cancer modeling

### Vitaly Volpert

Université de Lyon 1, France

Hybrid models for normal and leukemic hematopoiesis

This session is a joint initiative of SMAI and SIMAI, French and Italian Societies of Applied and Industrial Mathematics. It is motivated by the experience of European Coordination of a MC Research Training Network 2004-2008 devoted to the interactions of mathematical and biological sciences focused on mathematical modelling of cancer phenomena. The session is focused on the modelling and simulation of the complexity of cancer phenomena covering the whole path from the molecular (genetic) scale to that of tissues, through the description, by mathematical actions, at the cellular scale. The final, and main, objective of the modelling is focused on the optimization of therapeutic actions. The motivation is the idea that mathematics can effectively contribute to research activity in the field of biology by involving both mathematicians and biologists.

On the other side, this interaction can contribute to the development of mathematical sciences considering that the complexity of the system needs the development of new mathematical tools, possibly mathematical theories that can contribute to modelling complex systems in general. The session will be focused on the following topics: Cancer as a genetic disease and quantitative impact on the society; Multiscale modelling of cancer phenomena; Contribution of mathematics to the development of therapeutic actions and medical care in general.

### Organiser

Nicola Bellomo  
Maria Esteban

Torino Polytechnic, Italy  
Université Paris-Dauphine, France

### Moderator

Nicola Bellomo  
Maria Esteban

Torino Polytechnic, Italy  
Université Paris-Dauphine, France

<http://www.esof2010.org/schedule/1/4a>



## Evidence-based policy versus policy-biased evidence: EU/US perspectives

3 July, h. 15.45 - 17.00, Madrid

### **Alan Leshner**

CEO, American Association for the Advancement of Science (AAAS), USA

### **Roland Schenkel**

Director-General, European Commission - Joint Research Centre (JRC), EU

Both the US and the EU have recently undergone major administrative changes, which not only offer the potential for a restart in trans-Atlantic cooperation in tackling global challenges, but have equally triggered a debate about the role of science in policy-making. In appointing the former President of the American Association for the Advancement of Science (AAAS), John Holdren, as his Science Adviser and Nobel Laureate, Stephen Chu, as his Secretary of Energy, the Obama Administration has put scientific evidence back into the core of the policy agenda. Similarly, the Barroso Commission has identified growth based on knowledge and innovation as key to its mandate and announced the creation of a Science Adviser post, while its independent research arm under Máire Geoghegan-Quinn, the Joint Research Centre, is embarking on a new 10 year strategy responding to an ever-growing demand for customer-driven S&T support to policy-making.

In October 2009, the AAAS and JRC took the initiative of organising a Trans-Atlantic Workshop, bringing together 25 high-profile individuals from government, industry, academia, lobby groups etc, each with experiences of real-life scientific support to policy-making. This symposium will reveal what was identified in terms of best practices and pitfalls on both sides of the Atlantic. Speakers will evidence these findings with timely examples of “positive” and “negative” case-studies, exposing the facts as to why things worked or did not, who were the actors involved, what is/was at stake, and what conclusions we can draw about the bigger picture of “evidence based policy versus policy-biased evidence”.

### **Organiser**

Aidan Gilligan

European Commission - Joint Research Centre (JRC)-External, EU

### **Moderator**

Patrick Cunningham

Chief Scientific Adviser to the Irish Government, Ireland

<http://www.esof2010.org/schedule/1/4a>



## When Scientists read literature...

3 July, h. 15.45 - 17.00, Parigi

### Alice Jenkins

University of Glasgow, UK

Michael Faraday's literary taste and scientific style

### Gowan Dawson

University of Leicester, UK

The novelist puts this and that together: Richard Owen's reading of serialized fiction

### Alison Martin

Martin Luther University Halle-Wittenberg, Germany

A sentimental journey?: Alexander von Humboldt as a reader of English literature

### Stuart Robertson

University of Uppsala, Sweden

"Fle'ing through the air": James Clerk Maxwell and the poetry of motion

How do the cultural activities of practicing scientists affect their scientific thought? In particular, do scientists read literary texts in different ways from non-scientists? And do their literary experiences, tastes and preferences influence the construction and presentation of their own work? In order to understand how science and literature interact today, we need to examine their relationships in the period in which both fields were forming mature identities as professional disciplines. Accordingly, this session will discuss the influence of literature in science through four case-studies of major nineteenth-century scientists who were also prolific and enthusiastic readers: Alexander von Humboldt, Michael Faraday, James Clerk Maxwell and Darwin's rival naturalist, Richard Owen.

Each of the four panel speakers is an expert in the interdisciplinary field of literature and science studies. Each is also an experienced and talented speaker. In this session front-line interdisciplinary research that is accessible and engaging for general audiences will be presented. The map of literature and science that emerges will give us a basis for wideranging discussion of nineteenth-century as well as contemporary issues of science in culture.

### Organiser

Alice Jenkins

University of Glasgow, UK

### Moderator

Alice Jenkins

University of Glasgow, UK

<http://www.esof2010.org/schedule/1/4a>



## Feeding the world in times of global changes

4 July, h. 09.00 - 11.45, Auditorium

### David Baulcombe

University of Cambridge, United Kingdom

Science and the sustainable intensification of global agriculture

### Susanne Benner

BASF Plant Science Company, Germany

### Prem Bindraban

Director, ISRIC World Soil Information, Wageningen University, The Netherlands

Regional interdependency to arrive at global food security

### Gianluca Brunori

University of Pisa, Italy

The role of European agriculture and its contribution to world food security – or insecurity?

### Salvatore Ceccarelli

International Center for Agricultural Research in the Dry Areas (ICARDA), Syria

Plant breeding, biodiversity and food (in)security

### Andrea Ferrante

Italian Association for Biological Agriculture (AIAB), Italy

Food security is a key challenge for mankind. Global agricultural production needs to be doubled to feed an ever-growing world population that may reach nine billion by 2050. We will address these global issues in a two-part session. A panel involving scientists, stakeholders and civil society will discuss with the audience how to adapt the current agro-food system to the food security challenge, as well as ethical, social and other concerns such as safety, productivity versus environmental sustainability, preservation of the biodiversity, and third world development issues.

The first part – Matching food demand and food supply – presents the many factors that will drastically affect the production and distribution of food worldwide (climate change, availability of land, demographic changes, etc.), as well as public policies (EU CAP, production of bio-energy) and social drivers (life style, consumption trends) that determine the market economy of the agro-food system.

The second part – Can science and technology help find sustainable solutions to feed nine billion people? – discusses scientific and bio-technological developments aiming at improving the quality, productivity and adaptability of plants to environmental conditions, notably using agro-engineering and land management strategies, as well as genetic engineering to improve agricultural production in a sustainable manner.

### Organiser

Alessandra Bendiscioli

European Molecular Biology Organization (EMBO), Germany

Gerlind Wallon

European Molecular Biology Organization (EMBO), Germany

### Moderator

Pallab Ghosh

BBC news, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## The challenges of a changing environment: How do animals cope?

4 July, h. 09.00 - 10.15, 500

### Jukka Jernvall

University of Helsinki, Finland

Evolution of mammals in changing environments: worrying about how the teeth are getting along

### Patricia Beldade

Instituto Gulbenkian and University of Leiden, Portugal/the Netherlands

Pulling butterfly wings: genes and environment in evolutionary diversification

### Scott Gilbert

University of Helsinki and Swarthmore College, Finland/USA

EcoEvoDevo: The study about how environment gets involved with animal development

We all know that human life is full of compromises. Perhaps less appreciated, however, is the fact that all life, including our species, is the product of many compromises through the process of evolution. On one hand, the environment tests individuals continuously, and through natural selection, organisms become better adapted to prevailing conditions. On the other hand, genes and development influence how quickly, how well, and what way species can adapt. With climate change, the issue of how well evolution can track changing conditions is becoming an ever more timely topic. In other words, is there a risk that the changing climate outstrips the ability of species to adapt?

The objective of the session is to address this question by first illustrating how development is modified during evolution. Then, using examples ranging from butterflies to mammals, the session will demonstrate how adaptability of species may be compromised due to factors such as genetic interactions and rapid environmental fluctuations. In many species there is a continuous crosstalk between ecology and development, and a special emphasis is to point out how climate change can affect species at multiple steps of their life cycle. The proposed sessions will consist of an interdisciplinary panel highlighting the recent advances in studies integrating developmental genetics and ecology, and each presentation is planned as a starting point for discussions with the audience.

### Organiser

Risto Alatarvas

Academy of Finland, Finland

Karin Hannukainen

University of Helsinki, Finland

### Moderator

Jukka Jernvall

University of Helsinki, Finland

<http://www.esof2010.org/schedule/1/4a>



## European Research Area: An ERA of excellence and cohesion

4 July, h. 09.00 - 10.15, Istanbul

### Helga Nowotny

President, European Research Council (ERC), Austria

How the ERC strengthens excellence of European research

### Frank Gannon

European Research Area Board (ERAB), EU

Are excellence and cohesion potentially opposing goals in a European research policy?

### Giovanni Colombo

European Institute of Innovation and Technology (EIT) and Istituto Mario Boella,  
EU/Italy

Excellence and cohesion are potentially opposing goals. But both must be addressed in the European Research Area. In this session the steps towards selecting excellent projects will be addressed with the realisation that mere quality is not sufficient if research is also going to be an economic driver. How should peer reviewing - characterised as it is as being risk-averse - address the challenge of selecting the best projects and, simultaneously, ensure that sufficient outcomes from the labs will translate directly or indirectly to the economic sector? Will the selection of the top applications on quality only result in the exclusion to large areas of European Community and what steps should be taken to achieve coherence and cohesion in such a system? Will the processes to increase the quality and the impact of research in the ERA eventually become common to all member states? Excellence can also mean excellent strategies on how to improve science and research in a given region. Ultimately the ERA will have to achieve an increase in quality in a manner that strengthens all countries and this means developing a wide range of funding instruments – cohesion programmes, infrastructure development, mobility grants and developing tools to make the most prudent choices to match specific needs in the system.

### Organiser

Ingrid Wüning Tschol

Head of Science, Robert Bosch Stiftung, Germany

### Moderator

Ingrid Wüning Tschol

Head of Science, Robert Bosch Stiftung, Germany

<http://www.esof2010.org/schedule/1/4a>



## Personalized nutrition: Fitting into your genes

4 July, h. 09.00 - 10.15, Madrid

### Ulf Gorman

Ethics Division, University of Lund, Sweden

The ethics of personalised nutrition

### Barbara Stewart-Knox

University of Ulster, UK

Personalised nutrition: The consumers perspective

### Ben van Ommen

TNO Quality of Life, Netherlands

The Science and Business of Personalised Nutrition

Personalized nutrition attempts to deliver dietary advice at a personal level based on genotype data or on detailed phenotype data. It brings together many disciplines, of which molecular nutrition is the most preminent. But ethical and legal issues must also be addressed, and consumers response to genetic testing needs to be examined. Thus the need of new home based technologies for monitoring health, such as mobile mini bone scans, visual testing, muscle function tests and so forth.

From the molecular nutrition side, we need to study not only common variations in gene sequencing but also metabolomics, which measures very precise metabolic signatures. With these new data we can expect to cluster people together so that some personalized nutrition will be devised at group rather than personal level. The project will draw on the international research consortium [www.food4me.org](http://www.food4me.org).

### Organiser

Mike Gibney

Institute of Food and Health, Ireland

### Moderator

Josephine Wills

European Union Food Information Council, EU

<http://www.esof2010.org/schedule/1/4a>



## Shedding light on neutrinos

4 July, h. 09.00 - 11.45, Parigi

### **Carlo Giunti**

Neutrino mysteries, surprises and promises

INFN Torino and University of Torino, Italy

### **Federico Sanchez**

Status of neutrino oscillations & recent results

Universitat Autònoma de Barcelona, Spain

### **Mauro Mezzetto**

Future long baseline neutrino experiments

INFN Padova, Italy

### **Lee Thompson**

Searching for high energy neutrinos

University of Sheffield, UK

The most mysterious particles in our current model of the universe are the neutrinos. They pass through space and the Earth with almost no interaction. They are difficult to detect and yet they are thought to play a fundamental role in the formation of the Universe. This makes attempts to understand their nature of crucial importance to our understanding of where we came from. Over time there has been improvements in techniques to understand their nature which have revealed surprising results. Neutrinos can change their type! Theories predict only three types of neutrinos and do not predict neutrinos can change from one type to another. The result that they can change type has profound implications on our understanding of the Universe.

In this session we will introduce these mysterious particles and explain their importance in physics which attempts to describe the Universe. We will also survey the current findings including the latest hot-off-the-press news in the continuing effort to uncover these elusive, but critical little neutral ones.

### **Organiser**

Francesca Di Lodovico

Queen Mary University of London, UK

### **Moderator**

Francesca Di Lodovico

Queen Mary University of London, UK

<http://www.esof2010.org/schedule/1/4a>



**S** ATLAS (Automatic TransLAtion into Sign language): A project to improve deaf people inclusion

4 July, h. 09.00 - 10.15, Atene

**Leonardo Lesmo**

University of Torino, Italy

**Vincenzo Lombardo**

Virtual Reality MultiMedia Park, Torino, Italy

**Raffaele Menolascino**

Microsoft Research Center Torino, Italy

**Alberto Morello**

RAI, Italy

The integration difficulties of persons who were born deaf or became deaf in the first years of life are higher, since they could not acquire the knowledge of the spoken language. Sign Languages allow deaf children to acquire a full cognitive development within their community, which is composed of both hearing and deaf persons. Such cognitive development represents the prerequisite to a full access to education, culture and complete inclusion in working and social environments. An increasing request for Sign Languages interpretation in educational, legal, and healthcare context is today registered, and expected to be extended soon to culture and entertainment.

The ATLAS project exploits the convergence between cognitive sciences and ICT to build innovative services to provide deaf people with the access to broadcast communications, through the automatic translation of the written Italian natural language into the animated Italian Sign Language (LIS). In particular, the tangible objective of the project is the development of a translator able to translate sentences from the Italian natural language into the corresponding sequence of signs, through an intermediate translation into a written form of the LIS. This will involve the analysis of the natural language from both linguistic and structural point of view and the generation of virtual interpreters to visualize LIS sentences.

**Organiser**

Paolo Prinetto

Torino Polytechnic, Italy

<http://www.esof2010.org/schedule/1/4a>



## High altitude research stations: New insights on climate change

4 July, h. 09.00 - 10.15, Dublino

### Angela Marinoni

ISAC-CNR Bologna, Italy

The Nepal Climate Observatory - Pyramid: Atmospheric composition change in the Himalayas

### Erwin Flueckiger

University of Bern, Switzerland

Long-term environmental and climate research at the High Altitude Research Station Jungfrauoch

### Claudio Smiraglia

University of Milan, Italy

Glacier variations and climate change: Italian Alps and Himalayas-Karakorum case studies

### Silvia Ferrarese

University of Torino, Italy

Greenhouse gases monitoring at the Plateau Rosa station (3480m a.s.l., Italy)

The high mountain observatories have played a crucial role in atmosphere physics, chemistry, astronomy, cosmic ray physics, astrophysics, high energy and particle physics. Before the construction of the particle accelerators, the observation of cosmic rays at high altitude was the only way to study the high energy interaction mechanism. The first High Mountain Observatories (HMO), built all around the world in the first half of the 20th century, were witnesses of an extraordinary era in which the most important physicists devised new detection techniques and discovered new particles, setting up the bases of modern astrophysics.

Today HMOs still give a substantial contribution to fundamental research and are a network of excellence, both in environmental and climate change science and in space sciences. In the session we discuss the most recent findings on climate and glaciological observations related to climate change in Himalayas, aimed at understanding the impact on human life and the environment; these researches are carried out in the in the framework of the WMO - GAW (World Meteorological Organization - Global Atmosphere Watch) program, of the ABC (Atmospheric Brown Clouds) UNEP project, and of SHARE (Stations at High Altitude for Research on the Environment), a project by EV-K2-CNR carried out at the Everest Pyramid Observatory and in other HMOs. We will also take a look at the latest results in space weather forecasting.

### Organiser

Alba Zanini  
Arnaldo Longhetto

INFN Torino, Italy  
University of Torino, Italy

### Moderator

Marisa Storini

INAF - IFSI-CNR, Italy

<http://www.esof2010.org/schedule/1/4a>



## The dynamics of epidemics: How human mobility affects patterns

4 July, h. 10.30 - 11.45, 500

### Alain Barrat

Centre de Physique Theorique, Marseille, France

Sociopatterns.org: dynamics of face-to-face human proximity

### Dirk Brockmann

Northwestern University, USA

Feel sick? Follow the money!

### Marta Gonzales

Massachusetts Institute of Technology, USA

From human mobility to transportation networks

People interact. They travel. They move from households to schools, to workplaces, to distant places on trips. And diseases might travel with them. The current swine flu epidemic is just the last example of the crucial role that human mobility and interactions have on the spread of infectious diseases. People interact in workplaces, and their homes, and meet in crowded places. Rapid transportation infrastructures allow us to cover long distances on short time scales, and at the same time to carry a disease from an outbreak zone to a not yet infected region of the globe, reaching a propagation of pandemic proportion.

How much do we know about human interactions and mobility patterns? Recent years have witnessed a tremendous effort in the gathering, exploration and characterization of a huge flow of quantitative social, demographic and behavioral data. Quantitative studies of these datasets are key elements to the understanding of the spatial dynamics of human infectious diseases. They constitute the main ingredients of sophisticated large-scale models that can account, quantify and potentially predict the dynamics of emergent infectious diseases. This session will bring together the major experts in the field of human contact patterns and mobility of individuals at different scales.

### Organiser

Vittoria Colizza

ISI Foundation, Italy

### Moderator

Vittoria Colizza

ISI Foundation, Italy

Alessandro Vespignani

Indiana University, USA

<http://www.esof2010.org/schedule/1/4a>



## The role of science and expertise in the environmental disputes

4 July, h. 10.30 - 11.45, Londra

### Simone Arnaldi

Jacques Maritain Institute, Italy

Experts and prophets? A teleological perspective on environmental controversies

### Yannick Barthe

Ecole des Mines, Paris, France

Socio-technical disputes and public policies

### Luigi Pellizzoni

University of Trieste, Italy

Environmental conflicts and expertise: Theoretical insights and empirical evidence on the dynamics of politicization and depoliticization

### Brian Wynne

Faculty of Arts and Social Sciences, Lancaster University, United Kingdom

Public engagement as a means of restoring public trust in science

The reproductive basis of highly differentiated societies is increasingly dependent on knowledge and expertise as well as on equally specialized roles and institutions. In these societies the problem of the political decision is particularly delicate, because those who decide have almost always a deficit of knowledge and expertise related to the complexity of the relevant field of action. Hence the need to use ad hoc experts. This problem pervades many areas of policy choice, such as major infrastructures for mobility, technologies for energy production, environmental risks like climate change, genetic engineering, measures for environmental transition. Basically, we wonder if scientific expertise might be used in decision-making processes in a neutral and impartial way, and if the dichotomy between "democracy" and "expertocracy" can be resolved.

Experts have long been trapped in a perpetual dialogue within their community, but recently the role of pressure groups and bottom-up actors has increased. This workshop will analyze issues such as: expertise and society; expertise and definition of risk; expertise and decision making; expertise and environmental transition; models of expertise; mass-media, language, and rhetorical expertise; genealogies of expertise; expertise, trust and credibility.

### Organiser

Dario Padovan

Department of Social Sciences, University of Torino, Italy

### Moderator

Dario Padovan

Department of Social Sciences, University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Do children play along with stereotyping?

4 July, h. 10.30 - 11.45, Madrid

### Håkan Larsson

The Swedish School of Sport and Health Sciences, Sweden

Exploring the world through motion: A gender perspective

### Gaby Weiner

Edinburgh University, Uk

Everyday images in family life: what can they tell us about stereotyping?

### Thomas Gazlig

Helmholtz Association, Germany

Science, toddlers and teenagers: Haus der kleinen Forscher and MINTIFF initiatives

Many institutions of society reinforce traditional gender stereotypes. In the media, for example, women predominantly appear as objects of action, as victims and as caretakers, whereas men are usually portrayed as creative, strong, clever and full of initiative. While the media highlights a man's power and achievement, a woman, even an accomplished woman, is usually first evaluated by her appearance. These images contribute to the lack of women in education involving technology and a lack of men in education involving care-taking.

Gender education, especially if it addresses both girls and boys, can be a positive force for creating gender equality in modern society. It seeks to change the roles that girls, boys, women and men play in private and public life. By reducing gender stereotypes, gender education assists children in building a genuine civic equality where males and females live in relationships of cooperation and in mutual respect

### Organiser

Janna Wellander

Euroscience, Strasbourg, France

### Moderator

Janna Wellander

Euroscience, Strasbourg, France

<http://www.esof2010.org/schedule/1/4a>



## Science education + scientific interest = more scientists. Magical formula or wishful thinking?

4 July, h. 10.30 - 11.45, Atene

### Joachim Dengg

Leibniz-Institute of Marine Sciences (IFM-GEOMAR), Germany

Crossing borders with outreach programs and educational networks: A research institute's novel and daring approach to science education

### Elisabeth Engum

Bjørgvin videregående skole, Norway

Carboschools: An EU funded project that is building bridges between researchers and kids from secondary schools across Europe

### Michela Mayer

INVALSI, Italy

PISA. The facts behind the statistics.

This session will look at how the EU is tackling one of the current challenges facing science education today: to increase students' scientific literacy as well as promote scientific interest, thereby helping to counteract the drastically dropping numbers of young people taking up scientific careers. The results of the 2006 OECD Programme for International Student Assessment (PISA) heightened the debate surrounding science education across Europe. The results showed that students who enjoyed learning science were more likely to perform better and that, although the majority were motivated to learn science, only a small number took a "close interest" – an indication that a high level of scientific proficiency, together with a high level of scientific interest is required for continuing the next generation of scientists.

Using the PISA results as a starting point, this session will explore and discuss how science literacy and scientific interest can be raised. Good practice examples from Germany, UK and Norway will be presented from different perspectives – the scientist, the teacher, the psychologist. We will demonstrate successful and new ways in which science is not just being taught, but also communicated, in order to encourage more young people to take a greater interest in these subjects.

### Organiser

Louise Baker

Robert Bosch Stiftung, Germany

### Moderator

Louise Baker

Robert Bosch Stiftung, Germany

<http://www.esof2010.org/schedule/1/4a>



## Inspiring future politics: how technology assessors can best stimulate the political debate

4 July, h. 10.30 - 12.45, Other

<b>Paul Rübiger</b>	Member of the European Parliament, chairman of STOA Panel, Brussels, EU
<b>Antonio Correia de Campos</b>	Member of the European Parliament, vice-chairman of STOA Panel, Brussels, EU
<b>Malcolm Harbour</b>	Member of the European Parliament, vice-chairman of STOA Panel, Brussels, EU
<b>Csaba Tabajdi</b>	Member of the European Parliament, member of the STOA Panel, Brussels, EU
<b>Vittorio Prodi</b>	Member of the European Parliament, Brussels, EU
<b>Theresa Riera-Madurell</b>	Member of the European Parliament, member of the STOA Panel, Brussels, EU
<b>Kathy Riklin</b>	Nationalrätin Kanton Zürich, Switzerland
<b>Claude Birraux</b>	Député, Président de l'Office parlementaire d'évaluation des choix scientifiques et technologiques (OPECST), Paris, France
<b>Irene Oskarsson</b>	Member of the Swedish Parliament Committee on Environment and Agriculture , Stockholm, Sweden
<b>Helene Limen</b>	Senior Research officer, Research Service, The Swedish Parliament, Stockholm, Sweden
<b>Susanne Brenner</b>	TA-SWISS Centre for Technology Assessment, Bern, Switzerland
<b>Andreea Ricci</b>	Istituto Di Studi Per l'integrazione dei Sistemi, Rome, Italy
<b>Judit Castella</b>	Fundació Catalana per a la Recerca i la Innovació, Spain

Politicians aim to shape the world according to deeply felt ideals. To do this well, politicians need to be knowledgeable on expected future developments. Parliamentary technology assessment (PTA) supports them in anticipating and managing the impact science and technology (S&T) will have on future societies. PTA-practitioners are not alone in their desire to stimulate future politics on S&T. Critical scientists, societal organisations and private companies also seek to engage with parliamentarians to discuss the societal meaning of new developments. PTA operates at a higher level because it is scrupulously independent and operates in the interests of no-one. It seeks solely to ensure that legislators have the fullest information and analysis to inform decisions.. The rapid advance of S&T where the full life-cycle of developments can be very short, its growing impact on the economy, society and the environment than at any time before, the extremely high level of knowledge required to promote or regulate new technologies are all further challenges. As a result, a high level of continual scientific analysis is necessary, sometimes best provided immediately or, at least, in parallel with the R&D process. To do this, scientists have to be familiar with the political approach and the needs of policy makers and with the timely and apt ways of helping politicians to put the impact of S&T on the public agenda.

**Organiser**



Miklós Györffi  
Mahshid Sotoudeh

European Parliament STOA, EU  
Institut für Technikfolgen-Abschätzung, Vienna, Austria

## Moderator

Michel Antoine  
Geert Munnichs  
Lars Klüver  
André Gazsó  
Claudio Caviezel  
Sergio Bellucci  
Theodoros Karapiperis

Deputy-Director, OPECST Secretariat, France  
Rathenau Instituut, Den Haag, The Netherlands  
Director, The Danish Board of Technology, Denmark  
Institut für Technikfolgen-Abschätzung, Vienna, Austria  
Büro für Technikfolgen-Abschätzung beim Deutschen Bundestag (TAB), Berlin, Germany  
TA-SWISS Centre for Technology Assessment, Bern, Switzerland  
European Parliament STOA, Brussels, EU

<http://www.esof2010.org/schedule/1/4a>



## Sustainability: compromises and costs

4 July, h. 14.15 - 15.30, 500

### Peter Harper

Centre for Alternative Technology, United Kingdom

What can households contribute to national decarbonisation processes?

### Michael Obrist

Feld72, Austria

Sustainability in architecture according to Feld72

### Katerina Alexiou

The Open University, UK

A design perspective of sustainable living (1)

### Theodore Zamenopoulos

The Open University, United Kingdom

A design perspective of sustainable living (2)

### Andreas Loeschl

Centre for European Economic Research, Germany

Sustainable growth: An economic perspective

In all the discussions about climate change the “lifestyle” question is never far from the surface: will we be obliged to change our behaviour in fundamental ways? And is it essential that we do so? It hardly needs noting that limiting growth in material standards goes against the grain of our modern consumer society.

So what should we do? Do we look into existing ways of living “within our means” environmentally speaking, with a concomitant shift away from the values of the consumer society, or do we invest in new technologies in the hope that they will allow us to maintain our current standard of living – and allow others to attain this as well? In this session we will look at this issue as we discuss different approaches to sustainability, from practical action at a local level, to the creation of a truly sustainable global financial market. Throughout, we will focus on the way that we make choices and adapt to change. The format of this session will be a panel discussion with specialists on sustainable technologies, architecture, design, psychology, and economy. After we have heard from our speakers we will encourage participation from the audience during an open debate.

### Organiser

Yasemin Koc

British Council, UK

### Moderator

Quentin Cooper

BBC, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## State of the art nanofood technology: Risks and benefits

4 July, h. 14.15 - 15.30, Londra

### Hermann Stamm

European Commission - Joint Research Centre (JRC), EU

Nanofood: How to assess risks?

### Qasim Chaudhry

The Food and Environment Research Agency, York, UK

Food applications of nanotechnologies: An overview of potential benefits and risks

### Thane S. Thurmond

U. S. Food and Drug Administration, Center for Food Safety and Applied Nutrition,  
USA

Regulatory frameworks for nanotechnology applications in food: Are they adequate?

Recent opinion polls regarding nanotechnology applications identify one particular sensitive area: the use of nanotechnology in food and feed. Consumer groups who demonstrate, in general, a positive attitude towards nanotechnology including applications in many consumer products are very negative towards nanotechnology in food.

The advent of nanotechnologies has brought enormous new prospects to a wide range of industrial sectors. At the same time, these pioneering processes, materials, and applications have raised fresh concerns over their safety to human health and the environment. Particularly sensitive areas of application include medicine, personal care products, agriculture and food, as well as those applications that involve the deliberate large-scale release of nanoparticles into the environment, such as water treatment and remediation of polluted soils.

This session will focus on state-of-the-knowledge studies of nanotechnology applications for the food sector, identify current knowledge gaps, and suggest possible ways forward. We will discuss the potential benefits and risks of the new technology and consider strategies on how to communicate them to the public without jeopardizing the wider benefits of the new technology to society. The session also addresses the apparent global absence of a nano-specific regulation.

### Organiser

Hermann Stamm

European Commission - Joint Research Centre (JRC), EU

### Moderator

Elke Anklam

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## The idea of space: Mathematical musings on a fundamental concept

4 July, h. 14.15 - 15.30, Istanbul

### **Fabrizio Catanese**

University of Bayreuth, Germany

The marriage of geometry with algebra and the birth of new spaces

### **Olga Sorkine**

Courant Institute, New York University, USA

Shape spaces: representation, interpolation and editing of 3D objects

### **Alexander Gorban**

University of Leicester, UK

Geometry of data sets

### **James Carlson**

Clay Mathematical Institute, USA

The idea of space

The space we live is taken as a given fact by most of us. It seems to be flat and simple, but mathematicians and physicists have developed more general ideas, such as spaces that can have four or more dimensions and which may be curved. This session will outline the historical development of these more general notions, will touch upon their applications to fields as different as cosmology and criminology, will see how exciting new research in algebraic geometry (the marriage of algebra and geometry) is looking for new spaces in which humankind might think of “natural” the future, and will discuss how to tackle the geometrical properties of finite spaces (as opposite to continuous, infinite ones). Finally, we’ll see how digital 3D shapes – now commonplace in many areas of our life – are created and manipulated with the help of special mathematical representations and algorithms.

### **Organiser**

Yuri Tschinkel

Courant Institute, New York University, USA

### **Moderator**

Yuri Tschinkel

Courant Institute, New York University, USA

<http://www.esof2010.org/schedule/1/4a>



## Taming the wind: A strategic energy option for Europe

4 July, h. 14.15 - 15.30, Madrid

### Niels-Erik Clausen

Risø National Laboratory for Sustainable Energy, Denmark

Towards 50% Electricity from Wind

### Aidan Corcoran

Eirgrid, Ireland

Building a Transmission System for Wind

### Paul Dowling

SSE Renewables, Ireland

Taming Offshore Wind

### Igor V. Shvets

School of Physics, Trinity College, Ireland

Wind and Water: Ireland and the European Energy Landscape

Many regions of Europe enjoy an abundance of wind energy. Yet despite its distinct advantages (clean, renewable, distributed, not competing with food production), wind currently contributes less than 4% to Europe's electrical energy. Can its apparent drawbacks (intermittency, geographical variability, unpredictability) be mitigated sufficiently for it to become a large-scale contributor to Europe's future energy requirements? This session will hear from four visionary speakers who believe that the answer is "yes" and who will outline how this goal can be achieved.

Niels-Erik Clausen will present an overview of the state-of-the-art in wind energy technology and set out a vision for the future of wind energy in Denmark and Europe. Aidan Corcoran will review how EirGrid and other European transmission system operators are building the transmission infrastructure necessary to support large-scale wind generation and will also outline plans for a European, offshore SuperGrid. Paul Dowling will outline the next stage in the evolution of offshore wind with the award of leases for sites that have the potential to generate 4,000-9,000 MW, and he will discuss the SuperGrid as a potential solution to building large scale offshore wind. Igor V. Shvets will outline an imaginative proposal to combine large pumped-storage reservoirs with large-scale wind farms to give Ireland significant export capacity for electricity.

### Organiser

Eamonn Cahill

Office of the Chief Scientific Adviser, Ireland

### Moderator

Patrick Cunningham

Chief Scientific Adviser to the Irish Government, Ireland

<http://www.esof2010.org/schedule/1/4a>



## Addiction treatment – the limits of research findings

4 July, h. 14.15 - 15.30, Parigi

### **John Strang**

National Addiction Centre, Institute of Psychiatry, UK

Where transfer works/worked for pharmacological treatment

### **Michael Farrell**

South London and Maudsley Trust, UK

Where transfer works/worked for psychosocial/behavioural treatment

### **Gerhard Bühringer**

Addiction Research Unit, Technische Universität Dresden, Klinische Psychologie & Psychotherapie and Institut für Therapieforschung (IFT), Germany

What limits and hinders transfer

### **Marina Davoli**

Department of Epidemiology ASL RM E, Italy

From research synthesis to clinical guidelines

### **Pier Paolo Pani**

Unità di Coordinamento Regionale Dipendenze (UCRD), Italy

Are guidelines of any use to clinicians?

Addiction is a disease combining physical, psychological and social aspects. Addiction treatment is an excellent case to study how research findings have effected clinical practice and what can hinder its implementation. The session focus on experiences and possibilities to improve implementation of findings, where speakers concentrate on examples of successful transfer and describe problems on the other side.

In the first part we describe how research has informed clinical practice and what problems this process can face. Clinical research on pharmacological and psychosocial treatment has changed the understanding and treatment of addictions, whereas behavioural treatment has partly developed through advances in qualitative research. In the second part we discuss how to improve integration of scientific output into addiction treatment and discuss what help systematic reviews can provide, how to integrate evidence into guidelines, how to handle lack of evidence and asks the question, and what clinicians can get from guidelines. The input should feed an debate between panel and audience on the relationship between research and practice in this specific field of treatment.

### **Organiser**

Roland Simon

European Monitoring Centre for Drugs and Drug Addiction, EU

### **Moderator**

Marina Davoli

Department of Epidemiology ASL RM E, Italy

<http://www.esof2010.org/schedule/1/4a>



## International research infrastructures: The future of the European Research Area

4 July, h. 14.15 - 15.30, Atene

### **Peter Farago**

Swiss Centre of Expertise in the Social Sciences (FORS), Lausanne, Switzerland

European research infrastructures in social sciences and humanities

### **Liselotte Højgaard**

Department of Clinical Physiology, Nuclear Medicine & PET, Rigshospitalet, University of Copenhagen & Technical University of Denmark, Denmark

European research infrastructures and the Grand Challenges in medical research

### **Norbert Kroo**

Hungarian Academy of Sciences, Hungary

The mobility and the career paths in the research infrastructures.

### **Carlo Rizzuto**

Sincrotrone Trieste, Italia

European research infrastructures: what, why and how.

International experts in different fields of research (from social and human sciences to biomedical, engineering and physical sciences) will try to underline the central role of international and pan-European research infrastructures (RIs) in supporting the ever changing needs of Europe's scientific community. RIs act as quality benchmarking on research, technologies and training, and they offer an international service based on a peer review selection of users, who are offered the best instruments and environment. The first example are the medieval libraries-abbeyes: the places where scholars met and exchanged information on the basis of the preservation and diffusion of the Roman, Greek and Arab cultures. But also the places where several technologies evolved, from chemistry to agriculture. This concept has been retrieved in the large postwar facilities like CERN, EMBL and ESO, and now is being extended to all fields of research.

But which is the key of the RIs' success? There is a co-existence of basic research and applications, as well as training of young researchers and technicians (core of the knowledge triangle), and many RIs are attractive for public-private investments, being the source of new technologies (like Internet, CCD cameras, PCR). The action is supported by the European Forum on Research Infrastructures (ESFRI), which is developing, within the Lisbon and Lubjana agendas, the integration of the efforts of the EU countries.

### **Organiser**

Laura Bibi Palatini

Sincrotrone Trieste, Italy

### **Moderator**

Matteo Merzagora

, France

<http://www.esof2010.org/schedule/1/4a>



## The promises of Gender Medicine: Are sex and gender the key to a better health care?

4 July, h. 15.45 - 17.00, 500

### Flavia Franconi

University of Sassari, Italy

Gender pharmacology: A new Cinderella story

### Chiara Gabbi

Karolinska Institutet and University of Houston, Sweden/USA

Gender differences in nuclear receptor actions

### Anita Holdcroft

Imperial College London, UK

What influence do sex and gender have on pain relief for men and women?

### Vera Regitz-Zagrosek

Institute for Gender in Medicine, Charite University, Berlin, Germany

Sex, gender and cardiovascular disease, or why do we need gender medicine?

### Alan White

Centre for Men's Health, Leeds Metropolitan University, UK

Sex, gender and cancer risks

In the last decades a wealth of new knowledge has been produced concerning the biological (sex) and socio-cultural (gender) factors that influence individual health and healthcare of women and men. This innovative science field is known by the catchword "gender medicine". Despite the existence of handbooks in English and German, specialized centres in Europe and an international society, the scope and impact of this field are not widely known. It promises to innovate drug development and therapies by taking account of sex differences, to unravel "stereotypical" gender roles that impede proper health preventive behaviour, and to redress the neglect of the other sex if a disease becomes labeled as a "female" (osteoporosis) or "male" (coronary heart) disease. EU research has stimulated this kind of biomedical and health research; unfortunately these issues are not yet taught at a regular base in (bio)medical curricula nor spread among society at large.

This session will sensitize the wider community of (young) scientists, policy makers and the general public to the relevance of gender medicine for health care by an interactive discussion and exchange of best practices. Expert contributions and telling examples from various research fields (basic/preclinical research, physical health, mental health, public health) will be the core elements of this session in order to disseminate the new insights and to stimulate its application. The Project GenderBasic will be the starting point.

### Organiser

Ineke Klinge

Caphri School for Public Health, Maastricht University, The Netherlands

### Moderator

Ineke Klinge

Caphri School for Public Health, Maastricht University, The Netherlands

<http://www.esof2010.org/schedule/1/4a>



## **S** DNA patenting: Truths and fears

4 July, h. 15.45 - 17.00, Londra

**Robert Cook-Deegan**

Duke University. Centre for Genome Ethics, Law & P, United States

**Michael Hopkins**

University of Sussex SPRU, United Kingdom

**Daniele Paci**

European Commission - Joint Research Centre (JRC), EU

**Isabelle Huys**

Catholic University of Leuven, Belgium

Legal uncertainty in molecular genetic testing

Misunderstanding and widespread feelings of fear and danger still surround the issue of DNA patenting. The 1998 European Directive on protection of biotechnological inventions requires EU member states to recognise isolated genes and nucleotide sequences as patentable inventions. Recent rulings of the Board of Appeal of the European Patent Office have illustrated that patents can also be granted for methods of genetic testing without claiming genes themselves. These rulings upheld patents granted for BRCA1-related cancer tests, in the face of considerable opposition from European scientists, who consider DNA patents as a barrier to the progress of genomic research. However, there is not much empirical evidence on how patenting is affecting clinical genetic testing. Two independent in-depth studies mapping the complex landscape of diagnostic DNA patents in the US and Europe have recently been conducted. These will be presented with a view to discussing the barriers, the opportunities, the actual and potential threats of DNA patenting trying to address some of the following key questions raised by the scientific world and by society: Is patenting affecting accessibility to genetic testing? Are prices higher because of the requirement of licenses? Is there a visible impact on test development as a result of patenting? Is DNA patenting a fair and reasonable way to encourage and protect innovation, or is it a threat to patient rights?

### **Organiser**

David Merino

European Commission - Joint Research Centre (JRC), EU

### **Moderator**

Daniele Paci

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Ions, light and antimatter: How do they help us address present health and energy problems?

4 July, h. 15.45 - 17.00, Madrid

### Carsten Welsch

Cockcroft Institute of Accelerator Science and Tec, UK

### Sara Tegami

Max Planck Institute for Nuclear Physics, Heidelberg, Germany

### Amy Schofield

University of Liverpool, UK

Electrons, ions and light have been used successfully as probes to disentangle the nature of correlated quantum systems since more than a century. With the aim to understand and possibly even control fundamental interactions at smallest scales, scientists have been developing and exploiting many-particle imaging methods in combination with novel particle storage rings and light sources and thus pushed the limits of technology ever further.

In this session we will first give a historical overview of this interdisciplinary field with an emphasis on the link between fundamental research and societal and ecological problems: How can an understanding of the correlation effects in atoms help us address present health and energy problems? What is the impact of different kinds of radiation we are exposed to every day on cells? How can we link between observations at sub-atomic systems to macroscopic objects or even galaxies? We will then explain in an interactive setting how shortest light pulses with highest brilliance, radiation in the THz-regime, exotic highly charged ions, and even antimatter are produced in laboratories around the world and why these measurements are the ideal way to move into and up from the quantum world.

### Organiser

Carsten Welsch

Cockcroft Institute of Accelerator Science and Tec, UK

### Moderator

Sara Tegami

Max Planck Institute for Nuclear Physics, Heidelberg, Germany

<http://www.esof2010.org/schedule/1/4a>



## Scientists in the classroom and students in the lab: The making of future scientists

4 July, h. 15.45 - 17.00, Parigi

### Ulla Engelmann

European Commission - Joint Research Centre (JRC), EU

### Giovanna Guslini

MIUR- Ufficio Scolastico Regionale per la Lombardia, Italy

Creativity, curiosity, dialogue, direct experience, multidisciplinary approach: How young people and JRC projects make students have a good feeling with science in Europe

### Tony Scott

President, The Royal Dublin Society, Ireland

Science beyond the classroom

### Alessandro Zunino

IPSCT G. Caboto, Chiavari, Italy

A lost opportunity: Video production as an educational tool

Promoting science in schools is an investment for the future. Who will be the next generation of scientists? As fewer students decide to follow a career in science, we need to sow the seeds of interest on a European level.

A tried and tested formula is to bring scientists' expertise into the classroom, while inviting students to experience real experiments in the laboratory. These activities seem to be quite effective: visits to laboratories for students and teachers (a joint initiative by JRC in Ispra and the Italian School Authority has resulted in an increase of more than 10% of students who chose science in the first year of secondary school since 2004); projects that allow students and teachers to exchange views about science in school; national science competitions to motivate students and teachers of science, art, technology and languages through interdisciplinary activities (e.g. the "Science and creativity in the classroom" competition in 2009 and the Irish Young Scientists and Technology Exhibition). While students get to experience "real" science, scientists get feedback on their activities from a vast audience outside the laboratory, listen to fresh and innovative ideas, and set up a network for the scientists of the future.

### Organiser

Silvia Imarisio

European Commission - Joint Research Centre (JRC), EU

### Moderator

Elena Ceva

Freelance journalist, Italy

<http://www.esof2010.org/schedule/1/4a>



## Lands contaminated by nuclear testing - the Semipalatinsk experience

4 July, h. 15.45 - 17.00, Roma

### **Luis Leon Vintro**

University College Dublin, Ireland

History and radioactive legacy of nuclear tests at the Semipalatinsk Test Site (STS)

### **Nicholas Priest**

Atomic Energy of Canada Limited (AECL), Canada

Radiological/ health consequences of testing at the STS

The Semipalatinsk Nuclear Test Site (STS) in NE Kazakhstan was the first proving grounds for the testing of nuclear weapons by the former Soviet Union. From the first explosion in 1949 to the cessation of testing in 1989 over 450 tests were conducted in the atmosphere and underground at this site. Testing not only contributed to the global nuclear weapons fallout budget but also left a dangerous legacy of radioactive contamination on the surface of the test site and its surroundings. In recent years international effort has been made to assess the radioecological status of the STS and to evaluate the dosimetric implications posed by long-lived radioactive fallout products to populations living in the vicinity. This has been prompted by local pressure to reclaim contaminated steppe lands for agricultural use and to facilitate the exploitation of important mineral resources such as gold and coal. Other concerns have extended to issues of nuclear security and non-proliferation including the risk of 'dirty' bombs.

In this session, we will present the main findings of a recently completed 6-year project, funded under NATO's Science for Peace Programme, whose primary focus was on the identification and characterisation of areas of contamination and the determination of the pathways of radionuclide exposure to local populations. Three different speakers will address, in turn, the history of the STS, the science undertaken in the course of the project, and the human health consequences. An open forum (chaired by an international figure) with full audience participation will follow.

### **Organiser**

Peter Mitchell

University College Dublin, Ireland

### **Moderator**

Mukash Burkitbayev

Al-Farabi Kazakh (State) University, Kazakhstan

<http://www.esof2010.org/schedule/1/4a>



## MYMOSA: The pros and cons of motorcycles

4 July, h. 15.45 - 17.00, Atene

**John Chatterton-Ross**

Union Européenne de Motocyclisme (UEM) and Fédération Internationale de Motocyclisme (FIM), Belgium

**Filipe Fraga**

TNO Science and Industry, The Netherlands

**Ugo Galvanetto**

University of Padua, Italy

What is MYMOSA, deliverables and challenges

**Steffen Peldschus**

Ludwig Maximilians University Munich, Germany

Case studies from MYMOSA and other projects involving motorcycles

**Marco Pierini**

University of Firenze, Italy

MYMOSA and other projects: How they improve the safety and what are the challenges

According to the WHO 2008 Global status report on safety, about half of the estimated 1.27 million people that die each year in road traffic accidents around the world are pedestrians, motorcyclists and cyclists. It's a staggering number. On the other hand, at a time when resources become increasingly more limited, the motorcycles show several economical and ecological advantages against their direct competitor, the car: less fuel (more than 50km/l), less expensive to buy and maintain, easy to move and easy to park. Is there a way we can improve the negative safety record of motorcycles and other over-exposed groups?

In this session, we will be present what has been done in this areas with EU support, thanks to projects such as MYMOSA, PISA, SIM (Safety In Motion), APROSYS, APSN, 2-BE-SAFE, eSUM, SAFERIDER and others. After a brief presentation of the projects, four experts from several areas – namely one politician, one expert in road safety, one representative of motorcyclist association and one scientist – will discuss the issue and engage the audience in a debate on pros and cons of motorcycles.

### Organiser

Pedro Talaia

University of West Bohemia, Czech Republic

### Moderator

Pedro Talaia

University of West Bohemia, Czech Republic

<http://www.esof2010.org/schedule/1/4a>



## How much can robots learn?

5 July, h. 09.00 - 10.15, 500

### Edgar Körner

Honda Research Institute Europe GmbH, Germany

Learning to behave

### Giulio Sandini

Italian Institute of Technology (IIT), Italy

Humans and Robots

The secret in developing more human-like robots lies in teaching them to learn – like children. Children practice their senses and movement coordination by acting in an ever-changing surrounding; they have the ability to observe and conclude, to adapt and optimize their behavior autonomously. By contrast, a conventional industrial robot needs to be programmed with every behavior it is supposed to carry out. More complex and flexible reactions can only be achieved if it acquires the ability to learn.

To develop learning robots, scientists take their inspiration from nature. Insights from brain research can be put into mathematical algorithms used to control the robot. Scientific models can thus be tested by observing the robot's behavior, so that robotics is also a vehicle for a better understanding of the brain. As soon as robots will have acquired the ability to learn, they will become better at seeing, hearing and moving. This, in turn, is a prerequisite for them to learn from instructions or from experimenting. With all these aspects, robotics is just at the beginning of a major new development.

After a scientific overview, this session will discuss where robotics may lead us. How autonomous will robots ever become? Will they acquire very advanced abilities such as reasoning and emotions? And in the background of all this lurks the paradox whether there will ever be autonomous systems that nonetheless will obey the will of their creators.

### Organiser

Katrin Weigmann

Bernstein Network Computational Neuroscience, Germany

### Moderator

Katrin Weigmann

Bernstein Network Computational Neuroscience, Germany

<http://www.esof2010.org/schedule/1/4a>



## Scientific cultures across Europe: Similarities and differences

5 July, h. 09.00 - 10.15, Londra

### **Brian Trench**

Dublin City University, Ireland

Ireland, an aspirant knowledge economy

### **Martin Bauer**

London School of Economics, UK

How to develop comparative measures of “scientific culture” as context indicators for science communication and public mobilisation activities

### **Massimiano Bucchi**

University of Trento, Italy

Italy’s scientific culture: Evidence from public opinion surveys and media coverage analysis

### **Esa Valiverronen**

University of Helsinki, Finland

Finland’s image as an internationally advanced knowledge society

How alike or unlike each other are European countries in terms of their “scientific culture”? Can we describe and measure scientific culture by means of opinion and attitude surveys? How do the ideologies and belief systems, including the prevailing religious beliefs, influence the scientific culture of individual countries? These and other questions will be explored in this session which will examine similarities and differences in the scientific culture of selected European countries, principally Italy, Finland and Ireland, and of the European Union as a whole, as evidenced principally in Eurobarometer surveys. Drawing also on national surveys on public attitudes to science and technology and analyses of media coverage of science and technology, the panel will aim to characterise the scientific culture of these countries.

The panel will consider historical trends and regional patterns in responses to surveys over three decades on science and technology generally and on particular issues. The panelists are social scientists and communication specialists with a particular interest in perceptions and representations of science and technology, and experience in working directly with natural scientists on science-in-society and communication projects. Those attending the session, of whatever disciplinary background, will be invited to join the discussion on the shaping of a country’s scientific culture, which will also be framed in terms of national and supra-national policy.

### **Organiser**

Brian Trench

Dublin City University, Ireland

### **Moderator**

Brian Trench

Dublin City University, Ireland

<http://www.esof2010.org/schedule/1/4a>



## Science without borders: Democratization of society and the development of Science&Technology

5 July, h. 09.00 - 10.15, Madrid

### Georges Waysand

Université de Nice Sophia -Antipolis, Observatoire de la Côte d'Azur, Laboratoire Souterrain Bas Bruit de Rustrel, France

Citizenship and science: New challenges facing the crisis

### Irina Eliseeva

Sociological Institute of RAS, Russian Federation

Science for people

### Alan Leshner

American Association for the Advancement of Science (AAAS), USA

Integration of the global scientific community

### Wilhelm Krull

VolkswagenStiftung, Germany

Science and politics in science policy-making

Science in times of crisis usually becomes an agent of competitiveness for individual countries. On the other hand, it is becoming more and more clear that only in the context of international cooperation, with the establishment of international research teams, scientists are able to succeed. The session will discuss the following topics: science without borders as a new factor in the development of mankind, which helps to overcome inter-ethnic conflicts; science as a factor in consolidating the society; the role of young scientists with new knowledge and experience, more cosmopolitan in their nature; supranational, national, international nature of science; the global democratization and liberalization as a factor of progress; the scientific community and its ability to influence science policy; scientists' migration, foundation of international research centers, development of international research projects, activity of science foundations as tools for fostering the creative nature of modern science.

### Organiser

Nelli Didenko

St. Petersburg Academic University and Euroscience Governing Board, Russian Federation

### Moderator

Nelli Didenko

St. Petersburg Academic University and Euroscience Governing Board, Russian Federation

Georges Waysand

Université de Nice Sophia -Antipolis, Observatoire de la Côte d'Azur, Laboratoire Souterrain Bas Bruit de Rustrel, France

<http://www.esof2010.org/schedule/1/4a>



## The challenge of biodiversity

5 July, h. 09.00 - 10.15, Parigi

### **Ferdinando Boero**

University of Salento, Italy

Overview of biodiversity in marine and terrestrial habitats.

### **Decio Ripandelli**

International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy

Biotechnologies and biodiversity: Challenges and opportunities for the developing countries

### **Marco Cattaneo**

Le Scienze, Italy

Public perception of biodiversity

The UN has designated 2010 as the International Year for Biodiversity. The year-long event will culminate with a special high-level meeting at the UN headquarters in New York, in September, during the UN's General Assembly. The Academy of Sciences for the Developing World (TWAS) and the InterAcademy Panel on International Issues (IAP), have jointly organized this session that examines the complex issue of biodiversity conservation and sustainable use from a variety of perspectives that lie at the science-policy interface. We will try to look at biodiversity as a basic science by exploring what we know and what we don't about the planet's species and ecosystems.

In particular, the session is intended to: examine the progress (or lack of it) that has been made since the publication of the Millennium Ecosystem Assessment in understanding the ecosystem services; discuss the role of open space and Nature reserves in the preservation of habitats keeping in mind that it is tenuous to pretend to conserve single species (e.g. by the construction of corridors) if their habitats are destroyed; outline how international organizations can assist in the governance of places that do not fall under the jurisdiction of a single nation (oceans and polar regions); seek to analyze efforts to assign economic value to ecosystems services so that the full measure of a nation's wealth can be accurately assessed. We will also discuss the need to build scientific capacity in the developing world, and address what the generic public knows about biodiversity and how people do perceive the related problems, along with Governments actions taken worldwide and aimed at understanding and protecting biodiversity.

### **Organiser**

Daniel Schaffer

The Academy of Sciences for the Developing World (TWAS), Trieste, Italy

### **Moderator**

Cristina Serra

The Academy of Sciences for the Developing World (TWAS), Trieste, Italy

<http://www.esof2010.org/schedule/1/4a>



## Europe 2014 and onwards: A new deal between Member States and the European Commission

5 July, h. 09.00 - 10.15, Roma

**Jerzy Langer**

Polish Academy of Science, Poland

**Inge Maerkedahl**

Danish Agency for Science, Technology and Innovation, Denmark

**Charlotte Petri Gornitzka**

International Save the Children Alliance, UK

**Montserrat Torné Escasany**

Ministry of Science and Innovation, Spain

**Peter Fisch**

DG Research, European Commission, EU

Europe's future growth and wealth depends on its ability to identify Grand Challenges in a transparent way and to bring forward issue-oriented research and innovation with a potential to turn problems into solutions and world-wide progress that goes beyond the problem-solving capacity of each Member State. The future organization of EU research and innovation activities requires thus that the Member States and the Commission build a new deal to set up new transparent processes and use more efficient instruments, through community programmes, joint programming or other common endeavors. It should also enable a risk-tolerant and trust-based approach in research funding.

The Lund declaration that resulted from the first conference of the Swedish EU-Presidency on research policy "New Worlds New Solutions" has started a new phase in a course on how to respond to the Grand Challenge. With this panel discussion we wish to build upon the Lund declaration to bring about suggestions on the processes needed to build the new deal. Such processes, which need political support, should gradually move away from current thematic approaches, towards a structure where research priorities are based on the Grand Challenges. The development of such processes is a matter of urgency.

### Organiser

Ana Beramendi Heine  
Annette Moth Wiklund

Swedish Research Council, Sweden  
Swedish Research Council, Sweden

### Moderator

Gunnel Gustafsson

Director, Nordforsk Norway, Norway

<http://www.esof2010.org/schedule/1/4a>



## The European Research Area: an ERA addressing the “Grand Challenges”

5 July, h. 10.30 - 11.45, 500

**Jürgen Mlynek**

President, Helmholtz Association, Germany

**Liselotte Højgaard**

EMRC Chair, University of Copenhagen, Denmark

**Margret Wintermantel**

President, German Rectors' Conference, Germany

**Jean-Claude Burgelman**

EU Commission, DG Research, EU - Belgium

The European Research Area (ERA) is part of the global research environment facing common “Grand Challenges”, such as energy supply, climate change, water resources, ageing, healthcare and sustainable prosperity for all. Never before in history have we had so large a technical workforce, working on so many different kinds of problems, the solutions of which will determine our very survival. The ideal of the university as ivory tower has toppled, and is being replaced by an image of the open, digitally networked, knowledge institution working in collaboration with industry and society. Europe must develop new university structures to permit the multi-disciplinarity, on which many new insights will depend – to break away from our inward looking regional, institutional or disciplinary cultures, so as to be able to address the complexity of the Grand Challenges. Technological solutions alone will not solve the problems we face. Over the next decades we will build on economic, behavioural and medical research and sustainability, in chemistry, energy, transport and all forms of industry. Research in the humanities and social sciences will help us find the way to re-organize our lives and cultures to adapt and thrive. Indeed, Europe's strength in the humanities and social sciences, drawing upon its rich cultural heritage, may prove its greatest contribution to our global challenges.

### Organiser

Ingrid Wüning Tschol

Head of Science, Robert Bosch Stiftung, Germany

<http://www.esof2010.org/schedule/1/4a>



## Closing the loop: From body to mind and from mind to body

5 July, h. 10.30 - 11.45, Londra

### **Fabrizio Benedetti**

Medical School, University of Torino and National Institute of Neuroscience, Italy

The placebo effect: How words and rituals change the patient's brain

### **Vittorio Gallese**

University of Parma, Italy

The body the self and others

### **Donatella Marazziti**

University of Pisa, Italy

Neurobiology of romantic relationship

Most people have the feeling of having conscious experiences (Descartes' *res cogitans*) and in parallel of being well immersed in a physical world (Descartes' *res extensa*). The ancient problem of how the mind emerges in living organisms has divided generations of philosophers and scientists alike. Neuroscience is beginning to throw some light on this problem by recognising that consciousness emerges in parallel with the brain as it develops in an intimate relationship with the body and via it with the external world. This interaction occurs both ways with exposure to the world shaping the brain/mind and with the brain and mind acting in the world. This mutual interaction can be regarded as a loop. Traditionally each arm of this loop has been considered in isolation. The emergence of the "self" depends so much on the ongoing experience of the world. The influence of our brain on our behaviour is a well accepted concept. However, how the neural circuits of the brain with their specific chemical neurotransmitters control behaviour is only at its infancy.

In this session we will clarify how this occurs in determining impulsive and affective behaviour; discuss the influence of the mind over the body focusing on the so called "placebo" effect; underline the remarkable ability of humans to readily accept what other humans do thanks to "mirror neurons", the discovery of which has opened an entire new field of research on the bases of the "social brain" and its relation with the body. Finally we will discuss with the audience the implications for society of the dynamics of the full experiential loops from body to mind and from mind to body.

### **Organiser**

Marcello Costa

Flinders University, Australia

### **Moderator**

Marcello Costa

Flinders University, Australia

<http://www.esof2010.org/schedule/1/4a>



## **S** Who is leading Research Policy?

5 July, h. 10.30 - 11.45, Madrid

### **Isi Saragossi**

European Commission, EU

Towards 2020 - the evolution of European Research Area

### **Fulvio Esposito**

University of Camerino, Italy

Active involvement of EU Member States in setting and implementing EU policy on research careers

### **Iain Cameron**

Research Councils, UK

The interaction between UK and EU research policy

### **Nina McGuinness**

University of Hannover, Germany

Does the Open Method of Coordination (OMC) lay the foundations for a supranational research policy?

The involvement of Europe in Research has been bringing added value through collaborative funding projects (Framework Programmes) designed to tackle issues of European and global importance. These programmes provide funds for transnational collaboration by focusing on thematic areas of importance to Europe. Also, there have been horizontal actions to give researchers greater access to European research infrastructure and promote the transnational mobility of researchers (Marie Curie). The principle of subsidiarity has always been paramount; the European Commission would not intervene in areas of national responsibility. This was rigidly adhered to with each Member State closely guarding national research policy and funding. The winds of change came in 2000 with the Lisbon Agenda and the policy objective of developing a European research Area. The EC moved from being a funder of research to setting R&D policy. This session will focus on the evolution of a Research Career policy across Europe and how the EC now plays a central role in this area. Looking to the future the speakers will show how conflicts between European and national research policy have been overcome and that in many areas it is now hard to distinguish national from European policy. The question remains as to who is leading this European project, the Commission or the Member States and ultimately will it lead to a European federal system of research policy?

### **Organiser**

Conor O'Carroll

Irish Universities Association, Ireland

### **Moderator**

Conor O'Carroll

Irish Universities Association, Ireland

<http://www.esof2010.org/schedule/1/4a>



## SmartOcean: Technology solutions for intelligent monitoring of marine resources.

5 July, h. 10.30 - 11.45, Parigi

### Barbara Fogarty

National Centre for Sensor Research, Ireland

SmartBay: Technology Enabled Solutions for the Sustainable Management of Ocean Resources

### João Tasso de Figueiredo

Faculty of Engineering, Porto University, Portugal

### Borges de Sousa

Sensor systems on networked vehicles

### Juan José Dañobeitia

Castelldefels UTM-CSIC Director, Spain

OBSEA - A North-West coastal Mediterranean Observatory

Just over ten years ago, US Vice President Al Gore put forward a vision of Digital Earth as a multi-resolution, 3-dimensional representation of the planet that would make it possible to find, visualize, and make sense of vast amounts of geo-referenced information on the physical and social environment. Such a system would allow users to navigate through space and time, access historical data as well as future predictions based on environmental models, and support access and use by anybody, from scientists to children. At the time, this vision seemed almost impossible to achieve given its requirements on access to computer processing cycles, broadband internet, interoperability of systems, and above all data organization, storage, and retrieval.

Ten years later, many elements of Digital Earth are not only available but also used daily by hundreds of millions of people worldwide thanks to innovative ways to organize and present the data and rapid technological advancements. Moreover, individuals have now become empowered to produce vast quantities of geo-referenced information which is becoming increasingly relevant to help us monitor and understand the environment we live in. This session will explore these recent developments and show how close we have now arrived to achieving the vision of Digital Earth, particularly in relation to environmental information.

### Organiser

Barbara Fogarty

National Centre for Sensor Research, Ireland

### Moderator

Geoffrey O'Sullivan

Irish Marine Institute, Ireland

<http://www.esof2010.org/schedule/1/4a>



## MRI scanners and the impact of the EU Physical Agents (EMF) Directive

5 July, h. 10.30 - 11.45, Roma

### **Penny Gowland**

University of Nottingham, England

Future developments in MRI technology

### **Stephen Keevil**

King's College London, England

MRI and the Physical Agents Directive

### **Georges Herbillon**

European Commission, EU

The European Commission's perspective on the Directive

Magnetic resonance imaging (MRI) is a powerful imaging technique and one of the outstanding developments in medical diagnosis of the past century. It is a cornerstone of modern medical practice and it continues to make inroads as a clinical and research tool. This session will show how it allows medical practitioners to rapidly and effectively examine the human body without the use of ionising radiation. In addition, the session will explore current developments, such as the use of MRI during surgery, giving surgeons a constantly updated, 3-D map of the patient they are treating. In 2004, the EU adopted the Physical Agents (EMF) Directive, restricting occupational exposure to electromagnetic fields, including those used in MRI. Implementation in all EU Member States is mandatory, but was delayed until April 2012 when it was shown that some of the exposure limits in the Directive impact on the current use and future development of MRI technology. The MRI community is currently working with the European Commission in an attempt to find a solution that guarantees full use and development of MRI, whilst also ensuring appropriate protection of workers. This session will also include discussion of the background to this issue and an update on the current situation with the Directive.

### **Organiser**

Tajinder Panesor

The Institute of Physics, UK

### **Moderator**

Luisa Cifarelli

Italian Physical Society, Italy

<http://www.esof2010.org/schedule/1/4a>



## Towards the Next Generation Digital Earth: new approaches to the creation and sharing of environmental information

5 July, h. 14.15 - 15.30, 500

### Max Craglia

European Commission - Joint Research Centre (JRC), EU

From INSPIRE to the Next Generation Digital Earth

### Jeff Huntington

European Environment Agency (EEA), EU

Towards the next generation digital Earth: new approaches to the creation and sharing of environmental information

### Ed Parsons

Google Inc., United Kingdom

Google Earth : A community approach to Global Spatial Data Infrastructures

Just over 10 year ago, US Vice President Al Gore put forward a vision of Digital Earth as a multi-resolution, 3-dimensional representation of the planet that would make it possible to find, visualize, and make sense of vast amounts of geo-referenced information on the physical and social environment. Such a system would allow users to navigate through space and time, access historical data as well as future predictions based e.g., on environmental models, and support access and use by anybody, from scientists to children.

At the time, this vision seemed almost impossible to achieve given the requirements it implied about access to computer processing cycles, broadband internet, interoperability of systems, and above all data organization, storage, and retrieval.

Ten years later, many elements of Digital Earth are not only available but also used daily by hundreds of millions of people worldwide thanks to innovative ways to organize and present the data and rapid technological advancements. Moreover, individuals have now become empowered to produce vast quantities of geo-referenced information which is becoming increasingly relevant to help us monitor and understand the environment we live in.

This session, with keynote speakers from the European Environment Agency, the European Commission, and Google, will explore these recent developments and show how close we have now arrived, achieving the vision of Digital Earth, particularly in relation to environmental information.

### Organiser

Max Craglia

European Commission - Joint Research Centre (JRC), EU

### Moderator

Max Craglia

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## The double-edged sword of ICT in energy consumption

5 July, h. 14.15 - 15.30, Londra

### Luis Neves

GeSi Chairman, Vice-president Corporate Responsibility, Deutsche Telekom, Germany

### Axel Haentjens

Vice President of Marketing, Brand and External Communications, Orange, France

### Juergen Quittek

General Manager, Network Research Division, NEC Laboratories Europe, Germany

### Mario Pickavet

University of Gent, Belgium

### Stefano Frattesi

Indesit, Italy

### Giorgio Lofaro

Technicolor, France

### Fabio Di Marco

ZTE Italy, Italy

Information and communication technology (ICT), seen as the provisioning of communications, storage, and processing capabilities, is a major consumer of energy, whose cost ranks in the top expenditure list for any major telecom operator - in fact Telecom Italia is the second largest energy consumer in Italy. The increase in usage of communications, storage and processing, and the growing number of always-on broadband terminals threaten a drastic increase in energy consumption. New technologies, architectures, and solutions, are at hand to quench the thirst of energy of future infrastructures.

However, ICT can also be exploited to reduce energy consumption. With sensor networks and smart applications it is possible to reduce consumption as well as rebalance load to avoid peaks of demand. Smart cars, info mobility, smart agriculture and enhanced distribution are just a few of the areas where ICT can also contribute to a decreased energy consumption. ICT will also promote energy consumption reduction by substituting the need to involve atoms, be it by using either videoconferencing to decrease travel or e-ink to decrease paper production and consumption. Finally, ICT is bound to play a major role in increasing the efficiency in energy production and distribution.

### Organiser

Marco Ajmone Marsan

Torino Polytechnic, Italy

### Moderator

Roberto Saracco

Telecom Italia, Italy

<http://www.esof2010.org/schedule/1/4a>



## New opportunities in European drug research: the Innovative Medicines Initiative

5 July, h. 14.15 - 15.30, Istanbul

### Michel Goldman

Executive Director, Innovative Medicines Initiative (IMI), Belgium

The outcome of the first two Calls for proposals of IMI

### Elaine Irving

Glaxo Smith Kline, UK

The industry perspective: safety of drugs, and the input of patients is in the understanding of diseases

### Stephen Brendan McMahon

King's College London, UK

IMI projects from an academic perspective

The new research projects funded by the Innovative Medicines Initiative (IMI) focus on key questions in medical science. What makes the IMI research projects unique is that they bring together several large pharmaceutical companies, academia, smaller companies and other research organisations, and regulatory agencies and patient organisations as well. With its 2 billion euro research programme, IMI is the biggest public-private partnership in its kind. It receives € 1 billion funding from the European Commission's Seventh Framework programme, which will be matched by at least equal in kind contributions (consisting mainly of research activities) by the member companies of the European Federation of Pharmaceutical Industries and Associations (EFPIA).

The main goal of IMI's unique and innovative funding scheme is to enable the faster and more efficient development of safer and better drugs for patients, by improving the tools and technologies (such as biomarkers, imaging techniques, knowledge management platforms ...) that are needed to make drug development more successful.

### Organiser

Kim De Rijck

Innovative Medicines Initiative (IMI), Belgium

### Moderator

Kim De Rijck

Innovative Medicines Initiative (IMI), Belgium

<http://www.esof2010.org/schedule/1/4a>



## The Cosmos: A journey through its bright and dark constituents

5 July, h. 14.15 - 15.30, Madrid

### **Attilio Ferrari**

University of Torino, Italy

The dark sides of the Cosmos

### **Nicolao Fornengo**

University of Torino, Italy

A formidable task: to search for elementary particles as constituents of dark matter

### **Lars Bergstrom**

Oskar Klein Centre and Stockholm University, Sweden

Observing the Cosmos by gamma-rays: does the dark matter shine?

### **Pierre Binetruy**

APC and Université Paris-Diderot, France

A daring challenge: to decrypt the dark energy

The ordinary (baryonic) matter appears to constitute only a very tiny part of the total matter/energy content in our Universe. Dark matter and dark energy are currently invoked as the main ingredients of the Cosmos. Their presence in the Universe is supported by a large host of independent cosmological and astrophysical data. But very challenging questions arise: What is the nature of dark matter and dark energy? How are the dark constituents distributed in the Cosmos? These fundamental puzzles are at the origin of an incredibly large research activity in cosmology, astrophysics and particle physics. The experimental activity involves measurements in underground laboratories, in ground-based observatories and in air-borne detectors. Interpretation of the vast host of data which can be derived from these experiments as well as from completely independent investigations at the Large Hadron Collider at CERN leads researchers to investigate the most advanced theories about fundamental physics. This seminar aims at giving a general overview about hints and ideas being at present investigated in this field.

### **Organiser**

Alessandro Bottino

The National Institute of Nuclear Physics (INFN), Italy

### **Moderator**

Attilio Ferrari

University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Origin of the universe: Its shape and evolution

5 July, h. 15.45 - 17.00, 500

### **Hector De Vega**

Laboratory of Theoretical and High Energy Physics (LPTHE), Paris, France

Inflation at the origin of the Universe and its consequences today

### **Nazzareno Mandolesi**

IASF, Italian National Institute of Astrophysics (INAF), Italy

Measurements of the fossil radiation of the Universe with the Planck satellite

### **Norma Sanchez**

Observatoire de Paris, France

Gravitational waves at the origin of the Universe and a new expansion era

The session is focused on recent observational and theoretical progress on the Cosmic Microwave Background (CMB), dark matter, dark energy, dark ages, and theory of the early universe with predictive power, based on recent observation from scientific satellite WMAP, Planck, Hershel. The aim of the session is to put together real cosmological data and hard theory predictive approach connected to them in the framework of the Standard Model of the Universe. Infact the last experimental observation of the CMB, the first detectable radiation signal emitted 380,000 years after Big Bang, when the Universe became transparent, allows to test out theoretical models concerning the origin of the Universe, its shape and its evolution.

Panelist George Smoot (Nobel Prize for Physics in 2006) was a key figure on the road from CMB discovery (from the first CMB antenna observation to the straospheric baloons and COBE satellite data until the last measurement with WMAP satellite) to the understanding of how fluctuations in the primordial fireball survive to an epoch when galaxy formation is possible, giving shape to the Universe as today appears. In the first part of the workshop the evidence of experimental data is reported, while in the second part theoretical hypotesis are compared to measurements.

### **Organiser**

Alba Zanini

The National Institute of Nuclear Physics (INFN), Torino, Italy

### **Moderator**

Enrico Predazzi

University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Warriors against claptrap: Are myth busters the new generation of scientist-citizens?

5 July, h. 15.45 - 17.00, Londra

### Sergio Della Sala

University of Edinburgh, UK

Do all scientists have a civic responsibility? Is myth busting creating a skeptical informed public or a creating a culture of cynicism?

### Clive Cookson

The Financial Times, UK

Has the relationship between science and media changed with the new generation of scientists? What impact does myth busting have on how science is reported?

### Ana Godinho

Instituto Gulbenkian de Ciencia, Portugal

What role does social media have in a myth busting?

### Daniella Muallem

Sackler Medical School, Tel Aviv University, Israel

The Voice of Young Science

There is a growing focus on the responsibility of scientists and engineers to communicate the implications of their work with the public and take a public participation in science policy. This has led to the new generation of researchers experimenting with different ways of raising the quality of science in public debates, and correcting issues that capture public imagination. For two years running, US researchers published articles in the British Medical Journal critically examining the evidence for common medicine myths such as drinking 8 litres of water a day. In 2007 Voice of Young Science, a UK network of early career scientists, launched a campaign hunting for the evidence behind pseudoscientific claims, and published their findings in a dossier, "There Goes the Science Bit...". This was picked up by media worldwide and had over 40,000 copies disseminated. These campaigns have led to similar investigations springing up in other countries and a growing network of researchers tackling pseudoscientific myths. Looking at the impact of these campaigns, this session will discuss the impact of scientists taking on the responsibility of debunking common scientific misconceptions that have captured public imagination and whether myth busting is creating a new generation of civic minded scientists. The session will also discuss what the impact of these campaigns on public debates about science and science policy is and what effect it will have on the public perception of scientists.

### Organiser

Julia Wilson

Sense About Science, UK

### Moderator

Tracey Brown

Sense About Science, UK

<http://www.esof2010.org/schedule/1/4a>



**S** African Observatory for Sustainable Development: Science in support to decision-making for development policies and programs

5 July, h. 15.45 - 17.00, Istanbul

**Paolo Roggeri**

European Commission - Joint Research Centre (JRC), EU

Why an ACP Observatory?

**Alan Belward**

European Commission - Joint Research Centre (JRC), EU

Role of science in policy making, example of DOPA

**Samy Mambaele Mankoto**

President, Network of Protected Areas of Central Africa (RAPAC), France

Point of view of UNESCO and of RAPAC

**Carlo Paolini**

Biodiversity and conservation expert, independent consultant, Italy

From the perspective of Park Managers

**Mathieu Bousquet**

DG Development, European Commission, EU

Forest management and monitoring: the needs of the donor community

**Philippe Mayaux**

European Commission - Joint Research Centre (JRC), EU

The case of OFAC

**Andrea Micconi**

ONG Piemonte, Italy

Needs and role of the NGOs in the process

Africa's forests and biodiversity have high social and economic value; but they are often over-exploited, with damaging consequences for ecosystem sustainability and local economies. All too often poverty, economic decline, environmental degradation, desertification, and unequal access to resources and land lead to conflict and to migration. Africa's fast growing population and economic development put growing pressure on the environment to provide food, water and fibre, on the continent's urban centres and transport networks, and on energy sources. Information on the location, condition and evolution of resources is an important step towards sustainability, but unfortunately such information is often difficult to get, especially in parts of Africa.

Earth observing satellite technology, combined with geographical information management, can help fill the gap and really make a difference, providing crucial information for decision-makers, both African and from the donor community, allowing reliable assessments of situations and trends. As a result, both the formulation of development policies and the design of cooperation projects and programs can be improved, and African ownership can be fostered. This session will illustrate the case of the Digital Observatory of Protected Areas (DOPA) and of the Observatory other Forests of Central Africa (OFAC), and it will show the role satellites can have to help decision-makers foster the Millennium Development Goals, for poverty alleviation and for improved environmental sustainability.

**Organiser**



Paolo Roggeri

**Moderator**

Paolo Roggeri  
Alan Belward

European Commission - Joint Research Centre (JRC), EU

European Commission - Joint Research Centre (JRC), EU

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## From LHC to cancer therapy: How particle accelerators like cyclotrons and synchrotrons can be a tool to help in the fight

5 July, h. 15.45 - 17.00, Madrid

**Roberto Cirio**

University of Torino and INFN Torino, Italy

**Luciano Calabretta**

The National Institute of Nuclear Physics (INFN), Catania, Italy

Superconducting cyclotrons for hadrontherapy

**Andreas Peters**

Heidelberg Ion Beam Therapy Centre (HIT), Germany

Tumour therapy with charged particles at a synchrotron-based clinical facility

Cancer is the second cause of death in western countries and many are the tools that are used to fight against it. Radiation therapy is widely used and the goal is to deposit a large amount of energy on the target, sparing healthy tissue around. In standard radiation therapy, electrons and photons are used. Although technologically very challenging, hadrons like protons and carbon ions can be extremely useful and effective. The seminar will describe this type of therapy, often called hadrontherapy.

After a brief introduction on the rationale for exploiting protons and carbon ions to treat cancer, the panel will describe how cyclotrons and synchrotrons are currently used (and may be used in the future) in hadrontherapy. Focus will be put on the similarities between the physics and technology of these accelerators, in comparison to research accelerators.

### Organiser

Roberto Cirio

University of Torino and INFN Torino, Italy

### Moderator

Roberto Cirio

University of Torino and INFN Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## The science of humour

6 July, h. 09.00 - 10.15, 500

### Allan Reiss

Stanford University, USA

The neuroscience of humor: humankind's sixth sense

### Salvatore Attardo

Texas A & M University, USA

Humor competence

### Tom Flamson

University of California Los Angeles, USA

The evolution of humor as an honest signal

What would a visiting alien make of human laughter? We throw our heads back and show our teeth, water streaming from our eyes as we bark, choke and snort at each other. What is this strange behavior? How did it evolve? And what makes one thing funny and others not at all?

This session will assess what we have learned so far about humour. A roundtable of experts from the sciences and humanities will share progress from their respective fields in understanding humour's origins, mechanisms, and functions. In non-technical language, they will address such mysteries as the giggling of rats and the play of children to the power of satire and the infectious spread of yawns and laughter.

### Organiser

John Bohannon

Science Magazine, USA

### Moderator

John Bohannon

Science Magazine, USA

<http://www.esof2010.org/schedule/1/4a>



## Disaster prediction and management: Breaking a seismo-ill-logical circulus vitiosus

6 July, h. 09.00 - 10.15, Londra

**Vladimir G. Kossobokov**

IUGG Commission on Geophysical Risk and Sustainability and Russian Academy of Sciences, Russian Federation

Statistics of extreme seismic events and their predictability

**Alik Ismail-Zadeh**

International Union of Geodesy and Geophysics and Geophysikalisches Institut, Germany

From earthquake science to preventive disaster management

**Giuliano F. Panza**

University of Trieste, Italy

Neodeterministic seismic hazard assessment

**Jacques Zlotnicki**

Laboratoire Magmas et Volcans, France

Tracking electromagnetic phenomena associated to earthquakes

Contemporary geophysics and seismology are responsible for not coping with changes of exposures and vulnerability, which result in the observed steady increase of social losses due to natural hazards. Recent disastrous earthquakes including those in Wenchuan (China), L'Aquila (Italy), and Port-au-Prince (Haiti) are on the limit of a man-made fault committed by technocratic authorities and their advisers. The workshop intends to demonstrate that contemporary science can do a better job in disclosing natural hazards, assessing risks, and delivering such information in advance, in the case of catastrophic events, by means of pattern recognition, multiscale analysis, and neodeterministic seismic hazard modeling.

Geoscientists must initiate shifting the minds of community from pessimistic disbelief to optimistic debate on hazard predictability – based on the recent progress in real-time data retrieval and monitoring of distributed multiple geophysical characteristics world-wide. Geoscience must become a knowledgeable "brain" of preventive disaster management. Geoscientists have to revolutionize the current situation and eventually start protecting (to some extent) human life and property by a systematic, uninterrupted chain of tasks. These must substitute the existing practice of ill-logic cycle of quickly decaying interest and aftershock support, disaster after disaster.

### Organiser

Vladimir G. Kossobokov IUGG Commission on Geophysical Risk and Sustainability and Russian Academy of Sciences, Russian Federation

### Moderator

Alik Ismail-Zadeh International Union of Geodesy and Geophysics and Geophysikalisches Institut, Germany

<http://www.esof2010.org/schedule/1/4a>



## Tomorrow's photovoltaics: the new technology revolution

6 July, h. 09.00 - 10.15, Istanbul

### **Winfried Hoffman**

Applied Materials, Germany

Technologies for mass production of PV

### **Daniel Lincot**

CNRS Institute for Research and Development of Photovoltaic Energy (IRDEP),  
France

New PV technology directions

### **Heinz Ossenbrink**

European Commission - Joint Research Centre (JRC), EU

Innovation and large scale PV: EU outlook

The current emergence of photovoltaics as a mainstream source of electric energy is seen as only the first step in a long term process of learning how best to exploit our most abundant source of renewable energy. This leads to the question: what will be the next paradigm shift in photovoltaic technology to help it fulfil its potential? In today's society reeling from energy crises and financial instability, there is a need to look beyond short-term solutions to examine how best to invest in a new generation of infrastructure and technologies, bearing in mind that these may have profound implications for our society and lifestyle. Indeed realising our ambitions for photovoltaics will require high levels of innovation at all stages of the cycle, from device conception and mass production to distribution and consumption. To examine these issues, the session brings together three short talks by leading experts from the areas of research, industry and European renewable energy policy, followed by an interactive discussion to critically assess the different perspectives and implications for our society.

### **Organiser**

Nigel Taylor

European Commission - Joint Research Centre (JRC), EU

### **Moderator**

Ewan Dunlop

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Renaissance for discovery at CERN

6 July, h. 09.00 - 10.15, Madrid

### **Geraldine Servant**

European Organization for Nuclear Research (CERN), Switzerland

The particle accelerator - cosmology connection

### **Andre Mischke**

Utrecht University, The Netherlands

Big Bang in the laboratory

Europe's largest particle physics project, the Large Hadron Collider (LHC), will peer into the physics of the shortest distances (down to a nano-nanometer) and highest energies ever reached. For the next two decades particle physicists at the European Organisation for Nuclear Research will be able to explore the new energy domain beyond the Standard Model of particle physics, where new physics is expected to occur, such as the quark-gluon plasma (a novel state of matter) and the particle that constitutes the dark matter that makes up most of the matter in the universe. As the LHC will unveil the mysteries surrounding the structure of matter, this will also have far-reaching implications for cosmology and will allow us to learn more about the early universe. The matter of which we and the whole universe are made was probably born during the first microseconds after the Big Bang from a soup of elementary particles. The new LHC machine will allow creating the conditions similar of the Big Bang in the laboratory and will contribute to answer one of the basic questions of humanity: where are we coming from? This session aims to make the general scientific goals at the LHC facility known to a broader audience and will discuss the impact of the expected results to the society.

### **Organiser**

Andre Mischke

Utrecht University, The Netherlands

### **Moderator**

Andre Mischke

Utrecht University, The Netherlands

<http://www.esof2010.org/schedule/1/4a>



## New definitions in the International System of Units (SI) and development of European metrology

6 July, h. 09.00 - 10.15, Atene

### Walter Bich

National Institute of Metrological Research (INRIM), Italy

Intended new definitions in the International System of Units (SI)

### Luc Erard

Laboratoire national de métrologie et d'essais, France

The European metrology research programme (EMRP)

### Michael Kuehne

Bureau International des Poids et Mesures (BIPM), Sèvres, France

Intended new definitions in the International System of Units (SI)

### Leslie Pendrill

EURAMET Chair, Technical Research Institute, Sweden

Development of European metrology

For many years the goal of world metrologists has been to advance and improve the International System of Units (SI) by defining the base units in terms of the invariants of nature – the fundamental constants. This dream could soon become reality. The next years might see a new definition of four SI base units (kilogram, ampere, kelvin, mole), according to Resolution 12 of the 23rd meeting of the Conférence Générale des Poids et Mesures. At present National Metrological Institutes (NMIs) are carrying out experiments aiming at measuring precisely the involved fundamental constants ( $h$ ,  $N_A$ ,  $k_B$ ), in attempts to redefine the above four base units and make them traceable to fundamental constants. Progress in quantum optics is also stimulating studies addressing a possible future redefinition of the second and of the candela.

To have close and secure access to accurate measurements that are traceable to the International System of Units (SI) (metre, kilogram, second, etc.) is a prerequisite for a modern industrial society. The scope of today's challenges can only be met by multinational cooperation – hence the timeliness of a major new metrology research programme (EMRP), organised by EURAMET, the association of European NMIs in 34 countries. The EMRP is one of the most integrated collaborations in the flagship European Research Area.

### Organiser

Marina Sardi

National Institute of Metrological Research (INRIM), Italy

### Moderator

Elio Bava

President, National Institute of Metrological Research (INRIM), Italy

<http://www.esof2010.org/schedule/1/4a>



## Environmental risks for metals: From structures to artifacts

6 July, h. 09.00 - 10.15, Copenhagen

**Giovanni Ettore Gigante**

University of Rome, Italy

**Marco Parvis**

Department of Material Science and Chemical Engineering, Torino Polytechnic, Italy

Monitoring of environmental conditions in indoor environments

**Panayota Vassiliou**

National Technical University of Athens, School of, Greece

Innovative protective coatings and methodologies

**Fabrizio Zucchi**

Department of Chemistry, University of Ferrara, Italy

Outdoor bronzes corrosion and protection

Conservation and valorisation of cultural heritage is an essential mission of the European and especially Mediterranean countries, where most of the ancient artifacts are – a legacy of the human creativity. A dissemination action is essential to ensure that innovative materials, analytical techniques and conservation methodologies developed and tested in research projects reach the world of curators of tangible cultural heritage.

The session aims to bring together a group of material scientists involved in an Italian project with groups working on metals protection from other Mediterranean countries, for an exchange of experiences on sustainable safeguard and valorization of cultural heritage of artistic and historical interest. Our goal is also fostering access to knowledge and expertise developed in the field of materials science and providing an opportunity to participate in scientific exchanges at an international level.

### Organiser

Emma Angelini

Department of Material Science and Chemical Engineering, Torino Polytechnic, Italy

### Moderator

Emma Angelini

Department of Material Science and Chemical Engineering, Torino Polytechnic, Italy

Mario Piacentini

Department of Energetic, University of Rome, Italy

<http://www.esof2010.org/schedule/1/4a>



## The electricity transmission grid: How to integrate more renewable energy sources

6 July, h. 10.30 - 11.45, 500

**Nicholas Dunlop**

e-Parliament Initiative, UK

How can legislators promote a shift to increasing renewable energy sources in the electricity grids?

**Jorge Vasconcelos**

Portuguese Energy Regulator, Portugal

How can Energy Regulation reconcile RES promotion with efficient electricity markets and infrastructure development?

**Gianluca Fulli**

European Commission - Joint Research Centre (JRC), EU

What role does High Voltage Direct Current play and what HVDC backbones or supergrids does Europe need?

**Maria Rosa Palacín**

Institut de Ciència de Materials de Barcelona, Spain

What storage do we need to reach the targets?

The European Union's objective of raising the share of Renewable Energy Sources in its final energy consumption to 20% in 2020 calls for a significant increase in RES deployment in the electricity sector. Several analyses consider that up to 35-40% of electricity demand shall be covered by RES in 2020 in order to fulfil the EU ambitions. The need to accommodate such large RES share has significant implications on how the electricity arteries crossing the European countries/continent – i.e. the transmission networks – and the electricity capillaries covering much shorter distances – i.e. the distribution grids – have to be operated, designed and developed.

Focus of this session is on key regulatory, technical and technological challenges linked with integrating the ongoing swift and the expected increasing penetration of RES in the transmission grid. We will stress in particular the aspects related to find sustainable pathways for scaling up renewable energy and promote viable solutions for super grids, considering also the potential political impact of changed energy structures. Additionally, the session offers an international perspective on the issues faced by the European system and makes use of an interdisciplinary approach, thanks to speakers displaying diversified political, regulatory, technical and scientific background.

### Organiser

Gianluca Fulli

European Commission - Joint Research Centre (JRC), EU

### Moderator

Arnulf Jaeger-Waldau

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## From fish to humans: The evolution of regeneration and repair

6 July, h. 10.30 - 11.45, Londra

### Luca Bonfanti

Department of Veterinary Morphophysiology, University of Torino, Italy

Stem cells and stem cell niches: theme and variations

### Gunther Zupanc

Department of Biology, Northeastern University, Boston, USA

Regeneration across phyla

### Ferdinando Rossi

Department of Neuroscience, University of Torino, Italy

Evolution of brain repair

### Ernest Arenas

Department of Medical Biochemistry and Biophysics, Karolinska Institute,  
Stockholm, Sweden, Sweden

Generation and regeneration of dopamine neurons: therapeutic approaches to Parkinson's disease

Animals that are very simple in their architecture, such as invertebrates, can easily regenerate large parts of their body. Some vertebrates, such as salamander, can regenerate whole limbs and large portions of the nervous system. Mammals, including humans, as more complex organisms, have far smaller regenerative capacities. In the last few years, biomedical research has been pursuing the goal of cell replacement in human tissues, dreaming of the so called "regenerative medicine". The discovery of stem cells in many organs, even in the highly complex, non renewable tissue that makes the nervous system, opened new hopes for healing pathologies that are at present untreatable, such as for example the neurodegenerative diseases.

Why regenerative processes seem to slow down throughout evolution? It's just a matter of complexity in the architecture of biological structures? Do successful regeneration in simple organisms and abortive repair in humans share the same mechanisms? Is repair in humans a physiological function or should it be artificially created? In this workshop, the issue of regeneration and repair through evolution is discussed by speakers working on different aspects of the nervous system regenerative processes, spanning from fish to humans.

### Organiser

Luca Bonfanti

Department of Veterinary Morphophysiology, University of Torino, Italy

### Moderator

Ferdinando Rossi

Department of Neuroscience, University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Improving the patient partnership in clinical research

6 July, h. 10.30 - 11.45, Istanbul

### **Silvio Garattini**

Istituto Mario Negri, Italy

Involvement of patients in clinical research

### **Paola Mosconi**

Istituto Mario Negri, Italy

Involve lay people, patients' associations and scientific-medical representatives on the health debate: The PartecipaSalute project

### **Eibhlin Mulroe**

Irish Platform for Patients' Organisations, Science and Industry (IPPOSI), Ireland

What do the public know about clinical research?

### **Jacques Demotes-Mainard**

European Clinical Research Infrastructures Network (ECRIN) and INSERM, France

Clinical research as a model for the dialogue between science and society

### **Ruth Barrington**

Molecular Medicine Ireland, Ireland

Introduction to the discussion

Clinical research plays a vital part in making progress towards a better knowledge and understanding of human health and disease, and the development of new, safe and effective treatments. The dialogue between science and society is particularly important in clinical research, which involves patients and healthy volunteers. In this field, patients and citizens not only support, through taxes, the cost of research and development, but are also the end-users of the resulting therapeutic, diagnostic and preventive agents, and take risks as voluntary participants in clinical studies.

The European Clinical Research Infrastructures Network (ECRIN) aims to facilitate clinical research at the European level, taking advantage of the size of EU population to enhance the competitiveness of European academic research and the attractiveness of the EU for health research and development. The objective of this panel discussion is to highlight the importance of patient involvement in clinical research, and the need for a strong clinical research capacity and for appropriate funding mechanisms in Europe. The session will feature presentations from patient groups and the clinical research community at a European level. Using the example of Ireland, where IPPOSI is commissioning a survey of public attitudes to clinical research, the session will explore how patient organisations, working closely with the clinical research community, may address barriers to clinical research.

### **Organiser**

Christine Kubiak

European Clinical Research Infrastructures Network (ECRIN), France

<http://www.esof2010.org/schedule/1/4a>



## **S** Synchrotron light for Europe: Widening access to science

6 July, h. 10.30 - 11.45, Madrid

### **Nick Brooks**

Imperial College London, UK

Using high pressure to expand our knowledge of biological molecules

### **Paul Dumas**

Synchrotron SOLEIL, France

Infrared light: moving knowledge forward for Science and Society?

### **Mark E. Hodson**

University of Reading, UK

Metal munching earthworms helping us to clean up the environment

### **Richard Pattrick**

University of Manchester, UK

Illuminating the amazing talents of bacteria and minerals to create miniature bio-magnets

With Europe gathering 13,000 synchrotron light source users and an average production of 10,000 scientific papers every year, synchrotron light sources have been Europe's best kept secret... well not anymore! The European network of synchrotron light sources is joining forces to foster stronger collaborations and help promote this special area of science to the general public. If you're wondering what synchrotron light sources are and what on earth they do, this session will introduce their role across Europe and unveil some of their latest scientific achievements.

Four leading scientists will showcase their projects, demonstrating the relevance of synchrotron science in the fields of nano-scale materials, infrared imaging and environmental science. For those interested in the latest synchrotron based research and wanting to explore the area of cross country collaboration and the benefits it can bring to research, public engagement campaigns and institutes as a whole.

### **Organiser**

Sarah Bucknall

Diamond Light Source, UK

### **Moderator**

Toby Murcott

Ketoe Communications, UK

<http://www.esof2010.org/schedule/1/4a>



## **S** Towards an effective nutrition labeling scheme in Europe

6 July, h. 10.30 - 11.45, Atene

### **Klaus Grunert**

Aarhus University, Denmark

Do consumers understand and use nutrition information on labels?

### **Hans van Trijp**

Wageningen University, The Netherlands

Consumers attention to nutrition labels and their effect on making healthy choices

### **Grazyna Wasowicz-Kirylo**

Warsaw University, Poland

Consumers perceptions of labels in emerging markets: The case of Poland

Healthier food choices by European consumers hold the potential to significantly contribute to the health and wellbeing of the European community. It is generally believed that better and more transparent information on the nutritional content of food products could help consumers make more informed and hence more healthy food choices. However, there are many uncertainties as well as serious gaps in the scientific evidence about whether nutrition information on food labels is exerting an effect on healthy food choices among consumers. If there is an effect, it is not known how strong it is, under which circumstances it occurs, what factors are responsible for it occurring, or whether the effect differs between consumer groups.

With this background and in the context of the current revision of the nutrition labelling legislation, the European Commission funded a three year strategic research project (FLABEL – Food Labelling to Advance Better Education for Life) with two strategic objectives: to determine how nutrition information on food labels can affect dietary choices, consumer habits and food-related health issues; and to provide the scientific basis on use of nutrition information on food labels, including scientific principles for assessing the impact of different food labelling schemes, to be shared with the EU institutions, the food industry, and other stakeholders.

### **Organiser**

Stefan Storcksdieck

European Food Information Council (EUFIC), Belgium

### **Moderator**

Josephine Wills

European Food Information Council (EUFIC), Belgium

<http://www.esof2010.org/schedule/1/4a>



## What are the challenges to a democratic participation in scientific progress?

6 July, h. 14.15 - 17.00, 500

### **Giuseppe Testa**

European Institute of Oncology and European School of Molecular Medicine, Italy

Rethinking democracy in the biotechnological age

### **Giovanni Boniolo**

Firc Institute of Molecular Oncology and European School of Molecular Medicine, Italy

Deliberating ethical issues

### **Massimiano Bucchi**

University of Trento, Italy

Of ducks and rabbits, geese, cats and dogs: Is consensus possible in a pluralist society?

### **Herbert Gottweis**

Life-Science-Governance Research Platform, University of Vienna, Austria

Life, death, and democracy

### **Christine Hauskeller**

ESRC Centre for Genomics in Society, UK

Scientific progress and the limits of regulation

### **Matteo Mameli**

King's College London, UK

Science and democracy: rights and duties

The public accountability of scientific-technological innovation is the key issue of contemporary democracies. Yet, if the experimentation with the options that science offers is an increasingly central feature of our lives, a similar degree of experimentation with the democratic forms that should channel that offer seems to be less prominent. This is particularly the case for the life sciences, where the debate is still dominated by a law-lag or policy-lag narrative, according to which science proceeds down an inevitable slope of innovation with institutions and citizens in the equally inevitable downstream position of resisting or accepting change at the bottom of the slope. But if scientific-technological development needs to be publicly accountable, also by virtue of its deep impact, this accountability is bound to include forms of participation that accompany and shape the trajectory of the innovation slope, rather than wait passively at its bottom to reap or destroy the harvest. And yet, precisely what it concretely means to participate in scientific progress is an unresolved issue that confronts the very foundations of democratic life, both in their theoretical underpinnings and their practical dispensations. The aim of this session is thus to highlight the current challenges in the democratic deliberation around the life sciences, through an interdisciplinary approach that brings together science and technology studies, epistemology, bioethics and political sciences.

### **Organiser**

Giuseppe Testa

European Institute of Oncology and European School of Molecular Medicine, Italy

### **Moderator**

Giuseppe Testa

European Institute of Oncology and European School of Molecular Medicine, Italy

<http://www.esof2010.org/schedule/1/4a>



## More Years – More Life: tapping into the potential of the extended life.

6 July, h. 14.15 - 15.30, Londra

### **Vegard Skirbekk**

International Institute for Applied Systems Analysis (IIASA), Austria

Productive aging and learning: how do creativity and productivity change throughout a life time?  
Economic effects for individual and society

### **Claudia Voelcker-Rehage**

Jacobs University Bremen and Leopoldina, Germany

Plasticity of aging: the effect of physical training on cognitive functioning

### **Elisabeth Steinhagen-Thiessen**

Charité Berlin, Germany

Healthy aging: how can medicine foster autonomous living?

An individual in Europe ages very differently these days than she/he did at the beginning of the 20th century. Back then, average life expectancy was 48 years for women and 45 for men. Forty years ahead from now, people will live nearly twice as long: 90 years for women and 86 years for men are predicted by demographers. But not only has the number of years increased – also the quality of life. Lifestyles are more diverse than ever, and more and more people reach old age in good health, mental and physical fitness. Research has shown that neither learning abilities nor creativity or productivity of healthy people necessarily decline with age. The weight of the last third of life has started to force open the current understanding of retirement and life structure. After scrutinizing the relation between life and learning opportunities on the one hand and human abilities on the other, a multidisciplinary working group of the German Academy of Sciences Leopoldina, including science, humanities and industry practitioners, has presented evidence based recommendations to society and individual, to entrepreneurs, politicians, and civil society. It has also identified and disproved commonly held myths on aging. It has started to discuss with societal actors what can be done to fully tap the potential of the extended life and how aging societies and our minds need to transform accordingly. The coming decade (2010-20) will be decisively shaped by debate and action on demographic aging.

### **Organiser**

Katja Patzwaldt

Jacobs University Bremen and Leopoldina, Germany

<http://www.esof2010.org/schedule/1/4a>



## Epigenetics: Changes in genome functions that control differentiation, stem cell tumors, and ageing.

6 July, h. 14.15 - 15.30, Istanbul

### Valerio Orlando

Dulbecco Telethon Institute, Italy

Epigenetic control of cell identity

### Wolf Reik

University of Cambridge, UK

Epigenetic control of imprinting

Epigenetics describes the study of heritable changes in genome function that occur without a change in DNA sequence. In the nucleus of eukaryotic cells, genomic DNA is highly compacted with histone and non-histone proteins into a dynamic polymer called chromatin. Gene expression, chromosome segregation, DNA replication, repair, and recombination – all act on the chromatin template. Epigenetic marks, such as DNA methylation and chromatin modifications, play key roles in development and differentiation, and their deregulation is implicated in human genetic diseases and in cancer. Unlike the DNA sequence, epigenetic modifications vary among cell types, throughout the cell cycle, or in response to specific stimuli. Consequently, many epigenomes must exist, raising the question of how to interpret them all.

The study of epigenetic mechanisms of gene regulation in early embryos, germ cells, stem cells, and tumors will enlighten the molecular mechanisms. Detailed understanding of the mechanism involved in the regulation of epigenetic modifications will be valuable for the detection and eradication of immortal cancer cells. This knowledge will also be important for manipulating stem cells and adult cells for the repair and rejuvenation of diseased body tissues, and for the discovery of new therapeutic agents that can prevent or reverse the trend in ageing tissues towards debilitating diseases such as Alzheimer's and cardiac conditions.

### Organiser

Salvatore Oliviero

University of Siena, Italy

### Moderator

Salvatore Oliviero

University of Siena, Italy

<http://www.esof2010.org/schedule/1/4a>



## Reducing the toll of smoking-related disease and death: The case for tobacco harm reduction

6 July, h. 14.15 - 15.30, Parigi

### **Karl-Olov Fagerstrom**

Smokers' Information Centre, Sweden

The health effects of different nicotine products or all tobacco products are not equally harmful

### **Karl Erik Lund**

Norwegian Institute for Alcohol and Drug Research, Norway

The need for extended strategies: the potential benefits of harm reduction by LOTNIPs (low-toxicity nicotine products)

### **Lars Ramstrom**

Director, Institute for Tobacco Studies, Sweden

The rationale for establishing low-toxicity smokeless nicotine product policies: why are the pros stronger than the cons?

Tobacco control is of such global concern that it is at the centre of the world's first international public health treaty, the Framework Convention on Tobacco Control (FCTC). Traditionally tobacco control has centred around cessation policies, and while these policies have gradually reduced smoking rates, many in the tobacco-control community believe that they have lost momentum. Indeed, despite the well-known health risks and warnings, there are still hundreds of millions of committed smokers, and the number is growing in Asia especially. Currently accepted cessation aids have a poor success record, with less than 15% abstinence rates at one-year.

Harm reduction (HR) strategies hold significant promise to reduce smoking-related disease and death. HR has been effectively used in other areas, e.g. HIV reduction via clean needles. With tobacco, HR refers to issues raised by products designed to continue nicotine use but at reduced risk of disease. Evidence shows that not all forms of tobacco are equally lethal. In Sweden, men have taken up smokeless tobacco en masse, and Sweden now has the lowest rate of lung cancer of any comparable developed nation, and lower levels of oral cancer and vascular disease. In the US, one year ago the FDA tobacco regulation bill was enacted. We will provide new data on the Swedish experience, discuss THR in light of the anniversary of the historic FDA legislation, as well as discuss the role THR could play in the ongoing work of the FCTC.

### **Organiser**

Gilbert Ross

The American Council on Science and Health, USA

### **Moderator**

Gilbert Ross

The American Council on Science and Health, USA

<http://www.esof2010.org/schedule/1/4a>



## The European Galileo and EGNOS satellite navigation systems as key technologies for a sustainable green evolution of the transportation paradigm

6 July, h. 14.15 - 15.30, Roma

### **Carmen Aguilera Rios**

Galileo Supervisory Authority, European Commission, EU

Opportunities for innovation in transport and mobility applications: a perspective based on the FP7 experience.

### **Gabriella Povero**

Istituto Superiore Mario Boella, Italy

Role of higher education on Galileo and EGNOS in the innovation value-chain

### **Joaquim Fortuny-Guasch**

European Commission - Joint Research Centre (JRC), EU

The problem of security in GNSS-based critical applications: vulnerabilities and possible solutions

### **Ha Manh Thu**

International Cooperation Department, Hanoi University of Technology (HUT),  
Vietnam

Galileo as a world-wide system supporting the deployment of innovative mobility-related services in developing countries

### **Michel Bosco**

Deputy Head of Unit, GNSS International Aspects and Applications, European  
Commission, EU

Galileo programme update

Satellite navigation has already found widespread applications in a large variety of fields. Given the growing importance of these applications, a European project for a global satellite navigation system named Galileo has been started by the European Commission and the European Space Agency as a strategic priority. Galileo will be a novel system compatible and interoperable with GPS but designed for civil purposes, aiming at creating innovative applications based on positioning. Galileo consists mainly in the realization of a new satellite navigation system able to provide innovative features with world-wide coverage. Galileo will improve the performances with respect to the GPS, overcoming some of the present limitations of GPS in terms of precision, reliability and integrity. Galileo is already an important technological success for Europe (two satellites are already in orbit), and following this roadmap, Europe itself is planning to employ Galileo as a key infrastructure for the modernization and harmonization of several application sectors starting from road transportation. The goal of this session is to define which are the potentialities of Galileo in supporting the evolution of transportation in terms of traffic control and optimization, automatic European emergency call (e-112) based on the vehicle position, monitoring and reduction of vehicle pollution (green driving), monitoring of hazardous goods over the European territory and automatic pan-European road tolling.

### **Organiser**

Paolo Mulassano

Istituto Superiore Mario Boella, Italy

### **Moderator**

Michel Bosco

Deputy Head of Unit, GNSS International Aspects and Applications, European Commission, EU

# ESOF2010

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## Tackling social tension through Science communication

6 July, h. 14.15 - 15.30, Atene

### **Livio Riboli-Sasco**

Paris-Montagne, France

Developing citizenship and social cohesion by experiencing the values of scientific research: Student and teacher initiatives in French suburbs, ex-Yugoslavia and Palestine

### **Maya Halevy**

Bloomfield Science Museum Jerusalem, Israel

The Bloomfield Science Museum in Jerusalem: A place for social interactions and civil debates through scientific topics

Can science and science communication experience and skills be used to create places where conflicts and social tension may be addressed, and as a tool for promoting citizenship? Examples from Israel and France show that it can be done, and it is much appreciated – but it takes courage, creativity, hard work and dedicated people. At the Bloomfield Science Museum in Jerusalem, a multi-cultural team has built a place full of hope for both the Jewish and the Arab populations with many stories to be told. In the suburbs of Paris, a group of academics from Paris-Montagne, an association working with citizen participation, have established a programme aimed at high-school students from disadvantaged areas who are invited to visit research labs. This has been most successful; many of the 500 students involved so far have continued into scientific studies – but they have also become more engaged in their communities and schools. Other initiatives from the world of science events – like the "permanent science café" – will be also presented briefly.

### **Organiser**

Jan Riise

European Science Events Association (EUSCEA), Sweden

### **Moderator**

Leonardo Alfonsi

Vice-president, European Science Events Association (EUSCEA), and Director, Perugia Science Fest, Italy

<http://www.esof2010.org/schedule/1/4a>



## European Energy Research Alliance: the top of the league in energy research

6 July, h. 14.15 - 15.30, Copenhagen

### Raffaele Liberali

DG Research, European Commission, EU

EERA: The Research Pillar of the SET-Plan

### Massimo Busuoli

Italian National Agency for New Technologies, Energy and the Sustainable Economic Development (ENEA), Italy

EERA and its new Joint Research Programmes

### Britta Thomsen

Socialist Group in the European Parliament, Denmark

Political support to The Strategic Energy Technology Plan at EU and Member State level

In an unprecedented move, ten leading European Research Institutes have taken up the challenge and founded the European Energy Research Alliance (EERA) in October 2008. The key objective of the EERA is to accelerate the development of new energy technologies by conceiving and implementing Joint Research Programmes in support of the Strategic Energy Technology (SET) plan by pooling and integrating activities and resources, combining national and Community sources of funding and maximising complementarities and synergies. EERA is a direct answer from the European scientific community to the demand for innovation in the energy sector as some of the greatest problems of our time revolve around energy, namely security of supply, climate change and sustainability. The creation of EERA triggered already further activities. For example, the European Universities Association announced the establishment of a new "European Platform of Universities engaged in Energy Research" as a mechanism to bring university-based research into EERA activities. The workshop will demonstrate how the initiatives initiated and carried out by EERA strengthen, expand and optimise EU energy research capabilities through the sharing of world class national facilities in Europe and the joint realisation of pan-European research programmes.

### Organiser

Piotr Swiatek

Forschungszentrum Jülich, Germany

### Moderator

Piotr Swiatek

Forschungszentrum Jülich, Germany

<http://www.esof2010.org/schedule/1/4a>



## Practical uses of recent developments in genetic technology

6 July, h. 15.45 - 17.00, Londra

### Paolo Vineis

Imperial College London, UK

The role of genes and environment in chronic disease etiology: a long story

### Zdenko Herceg

International Agency for Research on Cancer, France

Understanding gene regulation and the breakthroughs of epigenetics

### Jon Hewitt

Portsmouth Hospitals Trust, Portsmouth, UK

The ethical challenges of Biobanks for genetic studies

### Miquel Porta

Institut Municipal d'Investigació Mèdica Universitat Autònoma de Barcelona, Spain

Integrating lifecourse, environmental, molecular and epigenetic epidemiology

The purpose of the session is to critically assess the recent developments in genetics (including genome-wide scans), their achievements and transferability to prevention, health promotion and health care. The role of genes and of environmental exposures will be compared in increasing risks for chronic diseases such as cancer, cardiovascular diseases and diabetes. Emphasis will be put on the interactions between genetic susceptibility and environmental exposures. Scientific, practical and ethical issues of genetic testing will be discussed.

The program will cover the following areas: - Achievements of genome-wide scans in cancer, cardiovascular disease and diabetes

- The role of the environment and gene-environment interactions in chronic diseases
- Is genetic information on chronic diseases transferable to prevention and medical practice?
- Ethical issues of genetic testing.

### Organiser

Paolo Vineis

Imperial College London, UK

### Moderator

Paolo Vineis

Imperial College London, UK

<http://www.esof2010.org/schedule/1/4a>



## Climate change prediction models: what's the point?

6 July, h. 15.45 - 17.00, Istanbul

### **Paul Williams**

University of Reading, UK

Climate change: Should we be worried?

### **Martin Wattenbach**

Freie Universität Berlin, Germany

The science behind climate change prediction

### **Jane Desbarats**

Institute for European Environmental Policy, UK

European climate change policies: Do they go far enough?

The challenge of implementing policies and strategies to mitigate the consequences of climate change, such as rising sea-levels and adverse weather conditions, is one which occupies an increasing amount of the political agenda. To document changes in the climate and to try and understand the causes of these changes, meteorologists, physicists and other scientists rely on computer-based models of the climate system. These mathematical models draw on our scientific understanding of the climate system which is gained, in part, by analysing a range of climate data gathered from a variety of sources. The ultimate aim of this work is to construct a comprehensive climate prediction model which summarises our physical understanding of the atmosphere-ocean system.

This session aims to discuss the efficacy of climate change prediction models and whether they are sufficiently robust to influence governments to implement policies to mitigate the affects of a changing global climate.

### **Organiser**

Tajinder Panesor

The Institute of Physics, UK

### **Moderator**

Katharine Richardson Christensen

University of Copenhagen, Denmark

<http://www.esof2010.org/schedule/1/4a>



## GMO testing – a global and scientific challenge

6 July, h. 15.45 - 17.00, Madrid

**Guy Van den Eede**

European Commission - Joint Research Centre (JRC), EU

**Arne Holst-Jensen**

National Veterinary Institute, Norway

**Roy Macarthur**

Food and Environment Research Agency, UK

**Claudia Paoletti**

European Food Safety Authority - EFSA, EU

**Emilio Rodriguez Cerezo**

European Commission - Joint Research Centre (JRC), EU

Genetically modified crops are being developed and planted in more and more countries world-wide (125 million hectares and 25 countries in 2008). Yet, before a GMO can be marketed, it has to pass an approval process. The regulations and duration of the approval process for GMOs differ between countries, leading to a situation where GMOs are being marketed and traded with different regulatory approval status world-wide.

When implementing this specific GMO legislation, more and more countries around the world are becoming interested in reliable and comparable GMO testing. GMO testing is therefore becoming a topic of global relevance, raising various scientific challenges, from sampling to selection of detection methods and interpretation of results. The workshop will address some of these scientific challenges.

### Organiser

Damien Plan

European Commission - Joint Research Centre (JRC), EU

### Moderator

Guy Van den Eede

European Commission - Joint Research Centre (JRC), EU

<http://www.esof2010.org/schedule/1/4a>



## Bodily awareness and empathy: New trends in philosophy and cognitive neuroscience

6 July, h. 15.45 - 17.00, Parigi

### **Corrado Sinigaglia**

University of Milan, Italy

The sense of body

### **Anna Berti**

University of Torino, Italy

Is altered body awareness restricted to one's self?

### **Salvatore Maria Aglioti**

Fondazione Santa Lucia and University of Rome, Italy

The consciousness of the other's pain

### **Frédérique de Vignemont**

Institute Jean Nicod, Paris, France

What comes first? Affective sharing or affective mind reading?

The aim of the session is to discuss nature and role of psychological processes and neural mechanisms characterizing most of the communicative interactions that are supposed to be at the basis of our social life. The central question is whether human beings have specific mechanisms enabling and facilitating the transmission of habits and preferences not only between individuals but also reliably down to generations. The relevance of these mechanisms in selecting and consolidating specific social strategies will be then investigated, especially in relation to their effects on one's own needs and emotions as well as on one's own sensitivity, the needs and emotions of others.

This session will also face the question as to whether needs and emotions could be considered as primary feedback sources, which have to be used to assess the main effects of social learning, at least at the basic level. Finally, the relationship between sensori-motor and affective mechanisms and higher order cognitive processes (i.e. conceptual and propositional knowledge) will be investigated. To this regard it will be crucial to take into account what is going on with social learning when the responsiveness to other's needs and emotions is lacking as in autism.

### **Organiser**

Fondazione Rosselli

, Italy

### **Moderator**

Gabriele Beccaria

Editor, TuttoScienze - La Stampa, Italy

<http://www.esof2010.org/schedule/1/4a>



## Access to scientific knowledge: Sustainable development issues and the need for a new type of metaknowledge

6 July, h. 15.45 - 17.00, Atene

### **Catherine Laurent**

National Institute for Agricultural Research (INRA), France

What is “metaknowledge”, and what are its implications for research and policymaking?

### **Nicholette Allsopp**

South African Environmental Observation Network, South Africa

An example of this approach based on existing research on biodiversity conservation policies

### **Nicole Dewandre**

DG Research, European Commission, EU

A policymaker’s point of view

### **Daniel Andler**

Université Paris-Sorbonne (Paris IV) and Ecole Normale Supérieure, France

Discussant

A weak link in the process of bridging science and policy is the transformation of the regime of access to scientific knowledge. This is shown by investigations dealing with the relevant economic and political organisation (e.g. intellectual property rights, role of scientific knowledge in policy design, etc). This change has also an epistemic dimension. The extreme abundance of research outputs, the increasing range of questions addressed by sciences, the plurality of theories within disciplines, make the judicious use of available knowledge for action more and more difficult. Hence the building of metaknowledge (knowledge on knowledge e.g. meta-analyses, systematic reviews) in order to better circulate the universe of available scientific knowledge. Several paths are explored to create such metaknowledge (for instance in the evidence-based tool box). But until now there has been little attempt to present in a synthetic way the diverse theories that coexist within each discipline, and to show their blind spots for both policy making and research.

The session will be dedicated to this issue. Examples will be taken in a specific domain of action – policies involving agricultural development and biodiversity conservation. The contributions will combine lessons from scientific disciplines (economics, ecology), philosophy of science and policy making.

### **Organiser**

Catherine Laurent

National Institute for Agricultural Research (INRA), France

### **Moderator**

Jacques Baudry

National Institute for Agricultural Research (INRA), France

<http://www.esof2010.org/schedule/1/4a>



## High risk-high reward research under the FP7-Cooperation programme: the Energy Theme experience

6 July, h. 15.45 - 17.00, Copenhagen

### **Carlos Saraiva Martins**

European Commission, Belgium

From NEST to FET: encouraging new ideas in a completely bottom-up approach

### **Dominique Bégin**

Louis Pasteur University, Strasbourg, France

Towards solar fuels by a novel photoelectrocatalytic approach

### **Stenbjörn Styring**

University of Uppsala, Sweden

From natural to artificial photosynthesis: Hydrogen from solar energy and water.

Funding agencies are calling nowadays for breakthroughs in energy technology. In his remarks on the need to support transformational technology research, US Energy Secretary Steven Chu explained that there is a need for a "technology that is game-changing as opposed to merely incremental". In Europe, under the 7th Framework Programme for Research (FP7), the Energy Theme is encouraging scientists to think "out-of-the-box" through the FET scheme. This scheme, with its roots based on the FP6 NEST activity, aims at encouraging new ideas in a completely bottom-up approach, stressing multi-disciplinary ideas. In energy, as in many other scientific areas, before a theory is accepted as a breakthrough it's often seen as a crazy idea.

What about turning the CO<sub>2</sub> emissions into fuel? This is exactly what an exploratory project did by converting carbon dioxide into hydrocarbons. The idea is to design and manufacture an autonomous fuel cell able to use solar energy to convert CO<sub>2</sub> into liquid fuel that can be injected directly into an engine. And can plants make clean hydrogen for us? Photosynthesis has long been studied to reveal how its natural mechanisms could be applied to produce energy. The idea is to integrate artificial photosynthesis in man-made systems and photobiological hydrogen production in living organisms into a functional bio-reactor that can demonstrate the concept of hydrogen production from solar energy and water.

### **Organiser**

Carlos Saraiva Martins

European Commission, Belgium

### **Moderator**

Raffaele Liberali

DG Research, European Commission, EU

<http://www.esof2010.org/schedule/1/4a>



## Neuroscience, technology and the self-image of man

7 July, h. 09.00 - 10.15, 500

### **Giorgio Innocenti**

Department of Neuroscience, Karolinska Institutet., Sweden

The brain in development and evolution

### **Rodney Douglas**

Institute of Neuroinformatics, University/ETH Zurich, Switzerland

Human and artificial intelligence

### **Wolf Singer**

Max Planck Institute for Brain Research, Frankfurt, Germany

Brain dynamics, brain imaging and free will

### **Wilhelm Vossenkuhl**

Ludwig-Maximilian University Munich, Germany

A fragile thinking wicker. Man in the universe

The image of man is at the roots of western culture. The following question will be addressed: Are the neurosciences generating a new self-image of man ? A number of recent studies suggest that this may be the case, but these views must be critically evaluated in their factual and philosophical robustness, and impact on society, laws and religion. The question will be articulated in four presentation: i)

The brain in development and evolution focusing on how brain connections differentiate in the two very different time scales. ii) Brain dynamics, brain imaging and free will with the notion of emerging properties in complex neural circuits. iii) Human and artificial intelligence focusing on the differences between human and artificial intelligence. iv) Ethical issues related to the neurosciences in particular the puzzling dilemma raised by the mental operations performed by patients in a vegetative state. The four presentations

will be delivered by i) a neuroanatomist interested in the relation between brain structure and function (GMI), ii) a neurophysiologists interested in brain dynamics and how they relate to perception, and decision making (WS), iii) a neuroinformatician interested in the basic principles of brain operations to be understood in computational terms and to be embedded into man-made devices (RD), iv) a philosopher with a strong background in science (WV).

### **Organiser**

Giorgio Innocenti

Department of Neuroscience, Karolinska Institutet., Sweden

### **Moderator**

Giorgio Innocenti

Department of Neuroscience, Karolinska Institutet., Sweden

<http://www.esof2010.org/schedule/1/4a>



## 450 million years of evolution: What can bats, plants and fish tell us about climate change?

7 July, h. 09.00 - 10.15, Londra

### Jennifer McElwain

University College Dublin, Ireland

Extinction, adaptation and survival: Plant responses to a global warming event in the deep past

### Stefano Mariani

University College Dublin, Ireland

Best of Both: A Natural History of Sex Change in Fish

### Emma Boston

Centre for Irish Bat Research UCD/Queen's University Belfast, UK

Using the past to predict the future: What can bats tell us about climate change?

The Earth's climate and atmospheric composition are changing at unprecedented rates, and by the year 2100 our climate will be drastically warmer than any time during human evolution. The novel integration of palaeontology, ecology and molecular biology is enabling scientists to understand the limits under which ecosystems can function, organisms can survive and biodiversity is sustained. This session will illustrate recent advances in our understanding of how bats, plants and fish have adapted and evolved over 450 million years of environmental change.

We will highlight: how fossil plant diversity responded to a catastrophic global warming event 200 million years ago; how a meteorite impact and greenhouse gas warming drove mammal and bat evolution 65-52 million years ago; and how fish populations and our oceans cope with the relentless exploitation by humans and the ever-rising pace of climate change. Our collective studies identify the consequences of exceeding an ecosystem's or an organism's tipping-point but also highlight the incredible wealth of survival capabilities of life on Earth. Only through the integration of these diverse scientific fields can we successfully manage the Earth's changing biodiversity in the face of future climate change.

### Organiser

Jennifer McElwain

University College Dublin, Ireland

### Moderator

Marco Ferraguti

University of Milan, Italy

<http://www.esof2010.org/schedule/1/4a>



## Economics at work: what economic research says on the minimum wage, development and the crisis

7 July, h. 09.00 - 10.15, Istanbul

**Christopher Flinn**

New York University, USA

**Esteban Jaimovich**

Collegio Carlo Alberto, Italy

**Filippo Taddei**

Collegio Carlo Alberto, Italy

Possibly the most important focus of economic research is the role of economic incentives in shaping individual behavior and how this aggregates within the boundaries of markets. The attention for incentives has directed research in this field toward all the major frictions that affect individual actions and welfare: informational asymmetries, search frictions and institutional constraints. This session provides three instances of this perspective illustrating the advance and the debate around three important issues of the current academic and political debate: whether a country should adopt a minimum wage, why some economies face so many difficulties in developing, and why the latest crisis was so unexpected.

### Organiser

Igor Prünster

University of Torino and Collegio Carlo Alberto, Italy

### Moderator

Pietro Garibaldi

University of Torino and Collegio Carlo Alberto, Italy

<http://www.esof2010.org/schedule/1/4a>



## Scientists in direct contact with the public in science centres and museums

7 July, h. 09.00 - 10.15, Madrid

### Sharon Ament

Natural History Museum, London, UK

The power of real people, real specimens and real scientists

### Frank Burnet

Burnet Consultancy, UK

When it's about issues, adults want to meet the ventriloquist, not his dummy

### Wolfgang Heckl

Deutsches Museum, Technical University of Munich, Germany

NanoToTouch: Nanosciences Live in Science Centres and Museums

The session will explore ways in which scientists can engage with the public in an open dialogue about contemporary or controversial science issues, helping people place global scientific issues into a meaningful context. Direct contact with scientists is an effective way of providing the public with first-hand information not only on the results of cutting-edge research (relevant on a global scale) but also on the people that carry out that research and on the process that allows researchers to come to their conclusions. From the point of view of scientists, engaging in dialogue with the public offers scientists valuable feedback on their work in terms of impact on society.

However, being a good scientist does not necessarily mean possessing the skills to communicate effectively and engage the public in interactive communication. Therefore, science centres and museums and other science communication professionals constantly devise new ways to support scientists in connecting with their audiences and targeting communication effectively. Speakers will relate a variety of methods that leading science communication organisations in Europe implement to foster direct communication between scientists and professional communicators. Training programmes in communication for researchers, as well as several formats used to involve scientists in a dialogue with the public will be explored by the panel and discussed with the audience.

### Organiser

Jennifer Palumbo

Ecsite - the European network of Science Centres and Museums, Belgium

### Moderator

Catherine Franche

Ecsite - the European network of Science Centres and Museums, Belgium

<http://www.esof2010.org/schedule/1/4a>



## Fibres from asbestos to carbon nanotubes: Science, health and policy making

7 July, h. 09.00 - 10.15, Parigi

**Bice Fubini**

University of Torino, Italy

**Dominique Lison**

Catholic University of Louvain, Belgium

**Trevor L. Ogden**

Annals of Occupational Hygiene, UK

Canada and other countries still export chrysotile asbestos, a well known carcinogen, to the developing world. This is very controversial. In 2007 the Canadian government assembled asbestos experts of different opinions to see what degree of consensus existed on health risks associated with chrysotile. Once the report was completed, the government did not release the report for a year, presumably in response to industry pressure. This suppression backfired, attracting public and media attention, and the report was finally released. Ironically, Canada has been the first country to introduce a mandatory safety reporting scheme for companies producing nanomaterials.

Carbon nanotubes, one of the most versatile product of nanotechnology, are currently designed for a number of technological applications, including medicine, but their use is controversial because they share with asbestos some features relevant to toxicity. Often science clashes with politics, industrial interests, fears in the general population, regulatory agencies – leave alone what may happen in court. Asbestos and nanoparticles are often in the press, but often the public's perception of the health risks is an overestimate or an underestimate, and seldom close to reality. This session aims at clarifying the current standings on this issue.

### Organiser

Bice Fubini

University of Torino, Italy

### Moderator

Bice Fubini

University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Ten years of human presence on the International Space Station

7 July, h. 10.30 - 11.45, 500

**Simonetta Di Pippo**

Director, Human Spaceflight, European Space Agency (ESA), Italy

**Maria Antonietta Perino**

Thales Alenia Space, Italy

**Paolo Nespoli**

Astronaut, European Space Agency (ESA), Italy

Two years after the launch of Zarya, in 2000 the International Space Station became home for Expedition 1, the first astronaut crew who visited the ISS, opening a new era of human spaceflight. Ten years later, an overview of this international endeavour is presented to the public of ESOF 2010 to celebrate the importance of having a human outpost in space. During the last decade we have permanently extended the biosphere to the Earth low orbit and the next step will be to further extend it to the Moon and Mars. Human Spaceflight is thus responding to the inevitable global need of exploration and – of the utmost importance – to the global need of new technologies for a more sustainable development of our society.

An astronaut, a representative from ESA Human Spaceflight, a scientist and a representative from the aerospace industry will discuss the importance of the human presence in space from different perspectives. What can only humans achieve in space? Which kind of science requires humans in space to produce high-quality results? Which are the consequences of a human space exploration on the evolution of human society? Which is the political value of an international human crew? Which is the impact of human spaceflight on the advancement of European scientific and technological knowledge? Will the “overview effect” – the feeling of universal connection experienced by astronauts during spaceflight – ultimately shape our vision of the world?

### Organiser

Cristina Olivotto

European Space Agency Space Research and Technology Centre (ESA-ESTEC), The Netherlands

### Moderator

Jonathan Amos

BBC, UK

<http://www.esof2010.org/schedule/1/4a>



## Regenerative medicine: The long winding road from promise to reality

7 July, h. 10.30 - 11.45, Londra

**Josep A. Planell**

Institute for Bioengineering of Catalonia (IBEC), Spain

Scientific challenges

**Richard Lilford**

University of Birmingham, UK

Health economics: Cost-benefit analysis

**Leen Trommelmans**

Centre for Biomedical Ethics and Law, Katholieke Universiteit Leuven, Belgium

Ethical issues

**Paul Kemp**

Intercytex, UK

The industry point of view

Regenerative medicine is a broad definition for innovative medical therapies that will enable the body to repair, replace, restore and regenerate damaged or diseased cells, tissues and organs. It might extend healthy life spans and improve the quality of life by supporting and activating the body natural healing capability. But quite a few hurdles must be overcome in order for the reg-med promise to become a reality at hospitals worldwide: First, the convergence of multidisciplinary efforts, as cell biologists and materials engineers, and their collaboration since the inception of projects with clinicians who are aware of the patients' needs. Second, the public acceptance of these revolutionary technologies, the need to adapt the current regulatory framework for their commercialisation as well as make them competitive, cost-wise, so health systems and insurance companies can consider their reimbursement.

Experts from each of these fields will present their point of view, followed by a debate with questions from the audience. We expect to shed some light on the possibly winding road to wonders such as spinal cord injuries cure or heart tissue renewal after a infarct.

### Organiser

Arantxa Sanz

Institute for bioengineering of Catalonia (IBEC), Spain

### Moderator

Josep A. Planell

Institute for Bioengineering of Catalonia (IBEC), Spain

<http://www.esof2010.org/schedule/1/4a>



## The missing mediator: Science debates in a knowledge based society

7 July, h. 10.30 - 11.45, Istanbul

### Hanns-J. Neubert

European Union of Science Journalists' Associations (EUSJA) and German Association of Science Writers (TELI), Germany

The German Science Debate 2009+: A perspective for a EU science debate

### Wolfgang Goede

German Association of Science Writers (TELI) and PM-Magazin, Germany

The historical background and democratic basis of science debates

### Shawn Otto

ScienceDebate2008.org, USA

Science Debate 2008+: Science in American policymaking and media

### Michele Ciavarella

Bari Polytechnic and www.sciencedebate.it, Italy

Italian science debate 2010+

Members of the German Science Writers TELI started a public science debate in the run-up to the German parliamentary elections 2009. They played out their role as mediators in society. Collecting wishes from scientists and science institutions, the journalists pooled the results and concentrated them into 15 questions which they put forward to candidates. The answers of the politicians were published on the web. This was the starting point of the public "Science Debate Germany 2009" between scientists, public and politicians, transported by the media.

The prototype was the "Science Debate 2008" developed by fellow journalists during the US elections with Barack Obama and John McCain. As a result Obama put science quite high on his agenda. And science became a public topic in a country where the public was considerably less informed about science than in Europe, and where the media strictly separated science and politics from each other.

The speakers will present the results of the science debates in the USA and Germany, look behind the myth that science and science journalism have to be unpolitical, discuss science PR in relation to cognisant decisions in a democratic society, and show options for similar debates in Europe to be performed by EUSJA. In smaller groups, the audience will discuss options for science debates in Europe, develop ideas for their improvement and questions from present scientists will be collected as a basis for debates about European science

### Organiser

Hanns-J. Neubert

European Union of Science Journalists' Associations (EUSJA) and German Association of Science Writers (TELI), Germany

### Moderator

Barbara Drillsma

European Union of Science Journalists' Associations (EUSJA) and Association of British Science Writers

(ABSW), UK

<http://www.esof2010.org/schedule/1/4a>



## The impact of new technologies on education and learning mechanisms

7 July, h. 10.30 - 11.45, Madrid

### **Daniel Andler**

Université Paris-Sorbonne (Paris IV) and Ecole Normale Supérieure, France

Education and cognitive science in the digital era

### **Roberto Casati**

Institut Jean Nicod - CNRS, France

The Myth of the Electric Teacher

### **Julien Lanas**

Donjon&Radon, France

Video games in education : integration of new media in pedagogical practice

The panel is meant to explore the impact of new technologies on education, and specifically on the learning mechanisms. The development of digital technologies is giving rise to new, hitherto unexplored opportunities of interaction at a distance, exploration of virtual environments, and broad access to information. The proposed workshop has its starting point in the widely diffused interrogation about the usefulness and most effective means of introducing new technologies into education, at both the formal and informal levels. There are many possible scenarios for this mutation, with widely differing potentialities and side-effects: technology is not good per se and it is important to identify the scenarios, positive and negative, that are enabled by technology.

It is important that the pedagogical reflection on new technologies and scenarios for the school and learning of the future be grounded on evidence, and not on mere beliefs and intuitions. The panel will present a systematic approach to the evidence concerning the introduction of new technologies in education. The aim of the panel does not consist in promoting ICT for education, or one pedagogical approach against another, but in informing and discussing about the possible and desirable scenarios, and the most promising research directions.

### **Organiser**

Daniel Andler

Université Paris-Sorbonne (Paris IV) and Ecole Normale Supérieure, France

### **Moderator**

Daniel Andler

Université Paris-Sorbonne (Paris IV) and Ecole Normale Supérieure, France

<http://www.esof2010.org/schedule/1/4a>



## Re-creating a Mediterranean identity through science

7 July, h. 10.30 - 11.45, Atene

### **Sergio Bertolucci**

CERN, Switzerland

Connecting people, cultures, ideologies, and beliefs: the experience at CERN

### **Maya Halevy**

The Bloomfield Science Museum Jerusalem, Israel

How the network of science communication organizations can help promote the agenda of the Union for the Mediterranean

### **Fulvia Mangili**

Festival della Scienza di Genova, Italy

A Science Festival as a melting pot of disciplines, cultures, traditions, and people

Science has no borders and no ideologies: it is a kind of "esperanto" that everybody is allowed to adopt as his own language. In international scientific institutions, like CERN, scientists work side by side, overcoming possible political strains existing between their countries. In the Mediterranean area, we share a long history of scientific achievements: one single thread links ancient Greek and Hellenistic scientists to Arabic and European scientists. But we also share, with different intensity, many problems in supporting science and in increasing the public understanding of science.

In this session we will look on different projects aimed at improving scientific citizenship in the Mediterranean countries, and we will discuss about how to re-create a Mediterranean cultural identity through science.

### **Organiser**

Barbara Gallavotti

Mediterranean Association for Science Advancement and Dissemination (MASAD), Italy

### **Moderator**

Sergio Bertolucci

CERN, Switzerland

<http://www.esof2010.org/schedule/1/4a>



Career Programme Opening Session: 1- The European Young Researchers' Award (Euroscience); 2- Keynote talk by Mariano Gago: "The future of Science and Technology in Europe"

3 July, h. 09.00 - 10.15, Auditorium

**Mariano Gago**

Minister for Science, Technology and Higher Education, Portugal

Professor José Mariano Gago is an experimental high energy physicist and a Professor of Physics of IST (Instituto Superior Técnico, Lisbon). He graduated as an electrical engineer at the Technical University of Lisbon and obtained a PhD in Physics at École Polytechnique and Université Pierre et Marie Curie, in Paris. He worked for many years as a researcher at the European Organisation for Nuclear Physics (CERN), Geneva, and in the Portugal Laboratory for Particle Physics (LIP).

He launched the Ciência Viva movement to promote S&T culture and S&T in society. He is responsible for the reform of higher education and for the policies leading to the development of science and technology in Portugal. During the Portuguese EU presidency (2000), he prepared, along with the EC, the Lisbon Strategy for the European Research Area and for the Information Society in Europe. During the 2007 Portuguese EU Presidency he promoted the adoption of a strategy for the future of S&T in Europe and for the modernisation of Universities in the EU.

He chaired the Initiative for Science in Europe (ISE) and campaigned for the creation of the European Research Council. He also chaired the High Level Group on Human Resources for Science and Technology in Europe and coordinated the European report Europe Needs More Scientists (2004). Prof. Gago was the first President of the International Risk Governance Council (IRGC) in Geneva and is a member of IRGC Board. He is a member of the Academia Europaea.

<http://www.esof2010.org/schedule/1/4a>



## Nature & Naturejobs guide to career alternatives

3 July, h. 10.30 - 11.45, Istanbul

**Igor Campillo**

Tecnológico Deusto, University of Deusto, Spain

**Guido Tarone**

Department of Genetics, Biology and Biochemistry, University of Torino, Italy

**Federica Castellani**

European Medicines Agency, UK

**Franck Tetaz**

Patent Attorney, Cabinet Regimbeau, France

**Michael Hagmann**

Swiss Federal Laboratories for Materials Testing and Research (EMPA), Switzerland

It is often unclear to young scientists what opportunities are open to them in their career outside of the life of a “normal” academic career. The basis of the editorial content published by Naturejobs is to provide an overview of the whole job market for scientists and often covers career alternatives for scientists with certain skill sets, as well as providing information on how people can develop their careers.

A wide array of careers either impact or support the scientific community. These include multidisciplinary academics, entrepreneurs with spin out companies, law (IP protection and the like), finance, journalism, Mmarketing/PR, human resources, industry, teaching and voluntary service organisations. The talks will centre around the personal experiences of the speakers and will provide insight into the types of jobs that they are currently working within as well as the skills (practical and academic) they have needed to develop to become efficient in their current roles. In turn this will give the attendees a better idea of the opportunities which are open to them and the information to be able to progress in their chosen field.

### Organiser

Bryony Lott

Nature Publishing Group, UK

### Moderator

Gene Russo

Nature Publishing Group, USA

<http://www.esof2010.org/schedule/1/4a>



## Employment opportunities for PhDs: The ABG experience in France and its applicability to the Italian situation

3 July, h. 10.30 - 11.45, Atene

**Sophie Pellegrin**

Association Bernard Gregory, France

**Mario Calderini**

Vice-president, Doctoral School of Torino Polytechnic, Italy

**Adalberto Merighi**

University of Torino and Regione Piemonte, Italy

**Bruno Quarta**

University of Bologna, Italy

**Mauro Zangola**

Unione Industriale di Torino, Italy

Employment opportunities for PhDs are limited in many European countries, but particularly so in Italy, where this issue has become a serious problem. Here, PhDs face severe difficulties in their approach to the labor market and in many areas, if not all, the doctoral title has become essential only for an academic career. Universities, public institutions and employers' associations are aware of the importance of bringing PhDs in contact with the private sector and with the business community, and several actions have been conceived with this objective.

In this session we will discuss the occupational prospects of PhDs trained by the local academic system. This will be done comparing the experience and the opinions of Universities, local institutions (Regione Piemonte) and local employers' associations (Unione Industriale di Torino) with that of the Association Bernard Gregory, a French non-profit organization which has a longstanding expertise in bringing the academic world in relation with the market, with the aim of finding new contacts and opportunities for job seekers.

### Organiser

Elio Giamello

Head, Doctoral School in Science and High Technology, University of Torino, Italy

### Moderator

Elio Giamello

Head, Doctoral School in Science and High Technology, University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## Science communication training for talking and listening: 1. Introduction

3 July, h. 10.30 - 11.45, Copenhagen

### **Blanka Jergovic**

Croatian Radio and University of Zagreb, Croatia

### **Kajsa-Stina Magnusson**

University College London, UK

This session will introduce the ESConet Trainers ([www.esconet.org](http://www.esconet.org)) approach to science communication training, based on many years' experience of working with European research networks. Unlike some other media training programmes, based on the "bag of tricks" approach, it emphasises genuine two-way communication - both talking and listening.

The European Union's "Science and Society Action Plan" underpins much of what is now required from European researchers in terms of their interactions with society at large and with their fellow citizens. This places many demands on researchers for which they get little, if any, training: interactions with the mass media, dialogue with citizens, etc. This session will give participants a chance to make contact and catch up with the latest thinking on training for communicating with their fellow citizens.

### **Organiser**

Steven Miller

University College London, UK

### **Moderator**

Steven Miller

University College London, UK

<http://www.esof2010.org/schedule/1/4a>



## The geographical distribution of grants in Europe: Brain-Gain or Brain-Drain?

3 July, h. 12.00 - 12.45, Parigi

**Maciej Wojtkowski**

Institute of Physics, Nicolaus Copernicus University, Poland

**András Málnási-Csizmadia**

Eötvös University, Hungary

**Adrian Curaj**

Executive Agency for Higher Education and Research Funding (UEFISCSU),  
Romania

Eastern European countries have a low success rate of applications for research support from European organisations, such as the European Research Council or the European Science Foundation. However, it should not to be seen as an “East vs. West” issue. Is it possible that young and brilliant scientists – either from “Eastern” or “Western” countries – who are rejected are victims of the lack of funding of research institutions in their home countries? European research organisations are far from perfect and they need more resources. The resources in turn come from Member States, which requests priority support from its heads of government, and the wheel turns... The aim with this session is to trigger a discussion on the sources leading to the unbalanced situation of grants distribution.

### Organiser

Raymond Seltz

Euroscience, Strasbourg, France

### Moderator

Jerzy Langer

Institute of Physics, Polish Academy of Sciences, Poland

<http://www.esof2010.org/schedule/1/4a>



## Pizza with the prof

3 July, h. 13.00 - 14.00, Other

**Martin Andler**

Université Versailles-Saint-Quentin, France

**Philip Campbell**

Editor-in-Chief, Nature, UK

**Elena Cattaneo**

Director, Laboratory of Stem Cell Biology and Pharmacology of Neurodegenerative Diseases, University of Milano, Italy

**Aldo Fasolo**

Department of Animal and Human Biology, University of Turin, Italy

**Ernst Fehr**

Institute for Empirical Research in Economics, University of Zürich, Switzerland

**Mohammed Hassan**

African Academy of Sciences,

**Sheila Jasanoff**

John F. Kennedy School of Government, Harvard University,

**Ingrid Wüning Tschol**

Science Department, Robert Bosch Stiftung, Germany

<http://www.esof2010.org/schedule/1/4a>



## Breaking into the media: What training do scientists need?

3 July, h. 14.15 - 15.30, Roma

**Elisabetta Tola**

Formicablu, Italy

**Steven Miller**

University College London, UK

**Brian Trench**

Dublin City University, Ireland

Science communication is an attractive option for researchers who are ready to leave the lab environment but do not want to make a complete break from science. Traditionally, many researchers who are interested in communication have looked to science writing as a new career. Many scientists have also become science communication professionals, working in the areas of public relations, event planning, editorial production, marketing, and so on.

Researchers looking for a new career quickly discover that breaking into the field requires appropriate training. Due to the rapidly changing dynamics of the relationship between science and society and the multi-faceted nature of the media system, scientists require more than simple “self-training” if they want to earn a living through science communication. But what does “more” mean? What courses should a scientist take? Are there unmissable subjects? This session will provide an opportunity for some of Europe’s most experienced science communication teachers to discuss the matter. Speakers will also comment on their own experience in managing science communication programs, as well as their efforts to establish relations in a common European framework.

### Organiser

Nico Pitrelli

International School for Advanced Studies (SISSA), Trieste, Italy

### Moderator

Nico Pitrelli

International School for Advanced Studies (SISSA), Trieste, Italy

<http://www.esof2010.org/schedule/1/4a>



## The funding challenge for european research careers

3 July, h. 14.15 - 17.00, Dublino

**Stefaan Hermans**

Directorate-General for Research, European Commission, EU

**Katrien Maes**

League of European Research Universities (LERU), Belgium

**Svetlana Berdyugina**

University of Freiburg and Kiepenheuer Institute for Solar Physics, Germany

**Karen Maex**

University of Leuven, Belgium

**Susanne Matuschek**

Swiss National Science Foundation, Switzerland

**Indi Seehra**

University of Cambridge, UK

Attractive research careers are essential if European universities are to host the world's strongest research talent. However, academic career paths in Europe are hindered by funding problems that result in low salaries, limited research support and unstable career prospects. This two-part session will explore the many financial challenges that impact on researchers' careers in Europe. In the first part, speakers from different background will provide their perspectives on the main funding problems of supporting researchers' careers, with some insight into how their own institution is addressing these issues. In the second part, participants will discuss – in “brainstorming” fashion – and compare possible approaches and recommendations for meeting these challenges. To conclude, a representative of the League of European Research Universities (LERU) will sum up the proposals presented for addressing the funding challenges at individual, institutional and wider policy levels. These suggestions will then be circulated by LERU to interested universities.

### Organiser

Katrien Maes

League of European Research Universities (LERU), Belgium

### Moderator

Katrien Maes

League of European Research Universities (LERU), Belgium

<http://www.esof2010.org/schedule/1/4a>



## What's the impact of the European Charter for Researchers on my work?

3 July, h. 14.15 - 15.30, Copenhagen

**Ellen Pearce**

The Career Development Organisation (CRAC) – Vitae, UK

**Thierry Boujard**

National Institute for Agricultural Research (INRA), France

**Izabela Stanislawiszyn**

President, European Council of Doctoral Candidates and Junior Researchers (Eurodoc), Poland

Opening up online all publicly funded researchers' positions; ensuring better career development opportunities for young researchers, including more autonomy and training skills; fully recognising researchers' qualifications from other institutions and countries. Whilst these goals are being pursued at political level through the "European Partnership for better careers and more mobility of researchers" between the European Commission and national authorities, at the level of individual research institutions they are the core business of the EU Charter & Code for researchers.

A new mechanism, the "Human Resources Strategy for Researchers" providing recognition of the concrete uptake of the Charter and the Code principles has been created. It allows to increase the transparency of career conditions and thus, the attractiveness of Universities and research organisations. The "HR Strategy" is a voluntary, light, and respectful of institutional autonomy tool available to research institutions that are seriously engaged in improving their human resource policy, which can also greatly contribute to increasing their international visibility.

How does the "HR Strategy work"? Why is it so important for researchers? Who is making use of it? What concrete changes is it going to make in the academic world? Through concrete examples, attendees will gain concrete benefit from learning more about these initiatives that are going to have a direct impact on their careers.

### Organiser

Dagmar Meyer

European Commission, EU

### Moderator

Dagmar Meyer

European Commission, EU

<http://www.esof2010.org/schedule/1/4a>



## Good research needs good management: And this can be learned!

3 July, h. 15.45 - 17.00, Roma

**Sabine Helling-Moegen**

Helmholtz Association, Germany

**Cornelia Maurer**

Max Delbrück Center for Molecular Medicine, Germany

**Frederik Wittock**

Johnson & Johnson Pharmaceutical Research & Development, Belgium

Today, scientists must keep all their options open for new career opportunities not only within but also past and alongside research. Whatever the choice, management skills have become an indispensable qualification for a successful career. This is the outcome of a paradigm change: scientists and administrators are gradually realizing the importance of better organization and coordination, lean and efficient work processes and effective leadership. Indeed, good management can lead to better research. As a result, science management is developing into a professional discipline. Universities, research organizations and industry compete in a global market not only for the best scientific talents, but also for the best managers. In this forum we will discuss the principles of effective science management and leadership. We will introduce the innovative approach of the Helmholtz Association to systematically develop these skills within the German research area, and describe how these tools and methods are applied in everyday work. Finally, a representative of the R&D department of a global company will critically reflect upon the impact of management and leadership qualifications on career development, illustrate management practices in industry, and discuss whether they may constitute role models for academic research.

### Organiser

Katrin Rehak

Helmholtz Association, Germany

### Moderator

Sabine Helling-Moegen

Helmholtz Association, Germany

<http://www.esof2010.org/schedule/1/4a>



## Scientific communication and the training of young researchers

3 July, h. 15.45 - 17.00, Atene

### Marie-Claude Roland

National Institute for Agricultural Research (INRA), France

### Maria José Gama

Université Libre de Bruxelles, Belgium

### Steven Miller

University College London, UK

### Raffaella Di Iorio

European Commission - DG Research, EU

The participants in this panel wish to explore the various implications of the scientific communication in the education and training of the young researchers and even in the development of the research itself.

The need for communication with the media and, through them with the public, is now accepted or, at least, undergone with philosophy. However, the exercise appears difficult and requires reflexion and training. (Steve Miller)

To communicate between peers, on the other hand, is considered like part of the research activity and, thus, essential. Nevertheless, looking more closely, the exercise is not simpler. "Publish or perish" is now a concept which penetrated the world of the researchers. However, if a reflexion on "what" and "how" to publish is quite in hand, it did not yet penetrate enough in the community of the researchers. (M-C Roland)

In addition, the research teams are increasingly multidisciplinary. The dialogue between scientists from different scientific fields is difficult and can block the efficiency of work of the team. So, the need for developing communication skills is more and more integrated in the training of the young researchers. At the Université libre de Bruxelles, these new competences are integrated to the basic education of the students of the Faculty of Science, at the BA and MA level. (Michel Claessens and MJ Gama)

### Organiser

Maria José Gama

Université Libre de Bruxelles, Belgium

### Moderator

Jean Richelle

Centre de culture scientifique de l'Université Libre de Bruxelles, Belgium

<http://www.esof2010.org/schedule/1/4a>



## Misconduct in science communication and the role of editors as science gatekeepers

3 July, h. 15.45 - 17.00, Copenhagen

**Arjan K S Polderman**

Pharmaceutisch Weekblad, The Netherlands

**Ana Marušić**

School of Medicine, Zagreb University, Croatia

**Sylwia Ufnalska**

EASE (European Association of Science Editors), Poland

The European Association of Science Editors (EASE) is an internationally oriented community of individuals from diverse backgrounds, linguistic traditions and professional experience who share an interest in science communication and editing. EASE has applied for a proposal to run a scientific seminar within the ESOF theme "policy what follows", which has been "accepted with provision". That session comprised 2 parts, a scientific seminar and a debate session about integrity in science, however the second part has not been accepted due to number of proposal and timetable. So, EASE agreed to present this debate session within the career programme. Due to the professional background and long experience of the presenters a debate on science communication could be very helpful for the new generations of graduates approaching scientific careers where a communication is fundamental in all fields. The speakers will talk about publication ethics and will not only approach the problems derived of misconduct in science but also how to detect it. This activity will be based on a debate with the public about specific issues on integrity in science, and analysis and discussion on some detected known cases of misconduct in scientific behaviour. The audience will be fully involved in the discussion and will be asked to solve problems regarding scientific fraud and conflict of interest.

### Organiser

Remedios Melero

European Association of Science Editors (EASE)/ Spain, Spain

### Moderator

Joan Marsh

Wiley-Blackwell, United kingdom

<http://www.esof2010.org/schedule/1/4a>



## New comparable data on young researcher's mobility patterns available: what are the consequences for European Research Policy?

4 July, h. 09.00 - 10.15, Londra

**Dagmar Meyer**

European Commission, Belgium

**Snezana Krstic**

Eurodoc, Serbia

**Karoline Holländer**

Eurodoc, Germany

**Giancarlo Gasperoni**

University of Bologna, Italy

Why do doctoral candidates go abroad? What are the most important obstacles they still face? To which extent do links to their home country persist? Do mobile researchers want to return, stay, or move to a further country? Which type of mobility is most common and is appropriate funding available? These kinds of questions have been subject to speculation so far. With the results of a recent survey conducted by Eurodoc, the European Council of doctoral candidates and junior researchers, in cooperation with INCHER, a HE research institute in Kassel (DE), we now have a clearer picture. Eurodoc started this major undertaking in 2008 to counteract the shortage on comparable data on crucial topics like motives for pursuing a doctorate, career paths, funding, supervision, generic skills and mobility. Also, a number of other studies regarding researchers' mobility and framework conditions have recently been conducted; they are complementary in that they concentrate on a different target group, or examine different questions. The session will provide an overview on data which is currently available. The session will be closed by the presentation of an Italian best practice in the survey and analysis of data concerning University degrees and graduates and PhDs employability: AlmaLaurea.

### **Organiser**

Ing-Marie Ahl

Eurodoc Vice-President, Sweden

### **Moderator**

Wolfgang Eppenschwandtner

Eurodoc, Austria

<http://www.esof2010.org/schedule/1/4a>



## Science Communication Training for Talking and Listening - Writing a press release workshop

4 July, h. 09.00 - 11.45, Copenhagen

**Steven Miller**

University College London, United Kingdom

**Blanka Jergovic**

Croatian Radio / University of Zagreb, Croatia

**Kajsa-Stina Magnusson**

University College London, United Kingdom

This practical workshop will introduce trainees to writing a press release based on their research, which could be sent out to a range of media outlets. A short lecture will explain, with examples, how the mass media cover science, technology and medicine, and the techniques required to turn front-line research into newsworthy material. Participants will get advice while writing up their work, and feedback on the finished press releases.

Participants will need to be registered for this workshop. It will be very useful if participants can bring with them a short (one-page maximum) article or description of their work suitable for a non-specialist audience. This workshop is an example of the activities of ESConet Trainers ([www.esconet.org](http://www.esconet.org)).

### Organiser

Steven Miller

University College London, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## Free Your Mind and the Rest will Follow

4 July, h. 09.00 - 10.15, Other

**Kerstin Beckenius**

Karolinska Institutet, Sweden

**Lena Hanson**

Karolinska Institutet, Sweden

**Hanna Jansson**

Karolinska Institutet, Sweden

**Anethe Mansén**

Karolinska Institutet, Sweden

**Hjalmar Gullberg**

Karolinska Institutet, Sweden

**Gene Russo**

Nature Jobs, United States

**Vanessa Campo Ruiz**

European Science Foundation, France

Use entrepreneurial tools to boost your career.

The entrepreneur is often described as someone who gets things done. By using the toolbox of the entrepreneur, you can become more focused, efficient and successful. As a researcher you have acquired solid lab and publication skills, but you have also gathered “soft” skills in areas such as teaching, presenting and writing of funding applications. It is now time to make use of these transferable skills and develop them further.

Developing these skills can add extra value to your research, or help you take the step and leave academia for an alternative career. The workshop will be opened with a talk on your career opportunities and the choices you have to make to change career path. We will then mix short presentations on entrepreneurial skills with creative exercises for hands on results. To conclude the session, a former researcher who has made an inspirational career journey, with transferrable skills in focus, will share her story.

### Organiser

Jessica Norrbom

Karolinska Institutet, Sweden

### Moderator

Jessica Norrbom

Karolinska Institutet, Sweden

<http://www.esof2010.org/schedule/1/4a>



## Energy and Enthusiasm is Contagious: How early career scientists can help the world reach excellence in science?

4 July, h. 10.30 - 11.45, Roma

**Jenny Baeseman**

Association of Polar Early Career Scientists (APECS), Norway

**Dave Carlson**

International Polar Year programme office, United Kingdom

**Paul Egerton**

Life, Earth and Environmental Sciences, European Science Foundation, France

**Gerhard Wolf**

European Economic and Social Committee of the EU, Germany

**José Leirião**

European Economic and Social Committee of the EU, Portugal

A new concept of a young researcher has emerged. Today, a successful early career scientist has to do brilliant research, publish in top journals, effectively communicate their work at conferences, and be actively involved in policy making, education and outreach activities. However, managing time and prioritizing these facets of a scientist can be challenging. During the International Polar Year, an international and interdisciplinary scientific programme involving more than 60 countries and 50,000 scientists, a new wave of highly enthusiastic early career scientists emerged, performing high-quality research and providing innovative ways for communicating science through education and outreach activities, while giving a voice to young polar researchers within major organizations on major issues. This session discusses how early career researchers are advancing high-level science, provide guidance on how to balance your time between science and outreach, and give examples on how young (european) scientists can have a strong voice in world science policies. To achieve such goals, we got together some of the most influential individuals in the world in terms of science, career development, policy and outreach.

### Organiser

Xavier Jose

Institute of Marine Research, Portugal

### Moderator

Susanne Feitz

Universitat Autònoma de Barcelona (UAB) Institut de Ciència i Tecnologia Ambientals (ICTA), Spain

<http://www.esof2010.org/schedule/1/4a>



## What's up with peer review: The future of peer review in policy, research and public debates.

4 July, h. 10.30 - 11.45, Dublino

**Adrian Mulligan**

Elsevier, UK

**Philip Campbell**

Editor-in-Chief, Nature, UK

**Tommaso Dorigo**

Università di Padova, Italy

What is the future of peer review? What does it do for science and what does the scientific community want it to do? Should it detect fraud and misconduct? Does it illuminate good ideas or shut them down? Does it help journalists report the status and quality of research? Why do some researchers do their bit and others make excuses? And why are all these questions important not just to journal editors, but to policy makers and the public? In September 2009 Sense About Science in association with Elsevier are publishing the latest results from worldwide survey of 100,000 scientists' preoccupations and preconceptions as both authors and reviewers of scientific papers. The survey will explore whether researchers attitudes to peer review are changing and whether there is a gap between their perception of peer review and the reality of what it can do. These insights will provide the baseline for discussions on how the system needs to evolve to cope with challenges it faces such as the expansion of the international research community, the issues of fraud, the development of open access and the role peer review plays in science policy and public debates about the quality of science. In this session a panel will respond to these latest results and discuss what the future for peer review is and what the international community can do to address the challenges facing peer review.

### Organiser

Julia Wilson

Sense About Science, UK

### Moderator

Tracey Brown

Sense About Science, UK

<http://www.esof2010.org/schedule/1/4a>



## Pizza with the prof

4 July, h. 13.00 - 14.00, Other

**Al Teich**

American Association for the Advancement of Science, USA

**Julia Fischer**

German Primate Centre, Göttingen, Germany

**Tom Kirkwood**

Institute for Ageing and Health, Newcastle University, United Kingdom

**Marja Makarow**

European Science Foundation, France

**Helga Nowotny**

President, European Research Council (ERC), Austria

**Harold Kroto**

Department of Chemistry and Biochemistry, Florida State University, United States

**Carl Johan Sundberg**

Karolinska Institutet, Sweden

**Kurt Wüthrich**

ETH Zurich and The Scripps Research Institute, La Jolla, Switzerland/USA

<http://www.esof2010.org/schedule/1/4a>



## Would Einstein be on Twitter? Exploring the potential and limits of Web 2.0 in science & science communication

4 July, h. 14.15 - 15.30, Roma

**Barbara Diehl**

Oxford Centre for Entrepreneurship and Innovation, University of Oxford, Saïd Business School, United Kingdom

**Cornelia Pretzer**

Deutsche Forschungsgemeinschaft, Germany

**Diane Scherzler**

Suedwestrundfunk, Germany

Journals and peer-reviewed publications are still the most widely used channels through which research results are disseminated within the scientific community. "The public" engages with science and research mostly through established media channels like newspapers, television and online services. However, social media and Web 2.0 tools are seemingly challenging the supremacy of editors, reviewers and science communicators. Blogging about science has become a new way of engaging "the public" directly with scientists while researchers are increasingly using such tools within their own communities for exchange or review purposes. The workshop focuses on the tools like Wikis, YouTube, Facebook, Twitter and social networks and explores their potential and limits for communication and scientific exchange. Which opportunities do the new tools offer – for scientists, institutions and the public? How can Web 2.0 contribute to the process of knowledge production and how do people benefit from scientists blogging. In the workshop, participants will have the opportunity to discuss the benefits as well as the potential risks of Web 2.0 applications for opening the scientific process up to "the public" as well as their peers. In addition, participants will be shown practical examples. Based on these examples participants are invited to form their own opinion about, where and how to use such tools and how to handle the time commitment and quality control required for their maintenance.

### Organiser

Barbara Diehl    Oxford Centre for Entrepreneurship and Innovation, University of Oxford, Saïd Business School, United Kingdom

### Moderator

Barbara Diehl    Oxford Centre for Entrepreneurship and Innovation, University of Oxford, Saïd Business School, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## Science Communication Training for Talking and Listening – – Being interviewed Workshop

4 July, h. 14.15 - 17.00, Copenhagen

**Steven Miller**

University College London, United Kingdom

**Blanka Jergovic**

Croatian Radio / University of Zagreb, Croatia

**Kajsa-Stina Magnusson**

University College London, United Kingdom

This practical workshop will introduce trainees to the demands of broadcasters interviewing researchers about their work. A short lecture will explain, with examples, how the broadcast media cover science, technology and medicine, and how to explain clearly and simply the main points of research findings. Participants will then be interviewed (and recorded), and will be given feedback on the final recordings.

Participants will need to be registered for this workshop. It will be very useful if participants can bring with them a short (one-page maximum) article or description of their work suitable for a non-specialist audience. This workshop is an example of the activities of ESConet Trainers ([www.esconet.org](http://www.esconet.org)).

### Organiser

Steven Miller

University College London, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## Redefining the Research University - Collaborating over and beyond the walls of tradition

4 July, h. 14.15 - 15.30, Other

**Luc E. Weber**

University of Geneva, Switzerland

There are two institutions that have remained relatively unchanged through the crises and upheavals of history. The modern university, dating from the 19th century, is one of them. While traditionally seen as a source of knowledge and innovation, universities have seldom been leaders in how to innovate themselves. Using the strengths of the diverse and varied backgrounds of the ESOF participants, we would like to disentangle this paradox together. The nature of knowledge is changing; it's now collaborative, learning-centered and interactive. Perhaps the time has come for universities, which primarily act as centres for learning about, to actively become involved in learning from and creating together with their environment? Join us as we question tradition, test our assumptions, and together redefine the research university. After this session, you will be able to:

- Reflect on the challenges that face the new research university.
- Identify ways in which a university can break the mold and contribute and collaborate in surprising ways.
- Explain how research universities can transform into learning organizations (and why they should).
- Design and develop concrete initiatives which can help move a research university from good to great.

### Organiser

Johanna Diehl

Karolinska Institutet, Sweden

### Moderator

Johanna Diehl

Karolinska Institutet, Sweden

<http://www.esof2010.org/schedule/1/4a>



## International Careers in Science

4 July, h. 15.45 - 17.00, Istanbul

### Helga Nowotny

President, European Research Council (ERC), Austria

### Suzanne Fortier

Natural Sciences and Engineering Research Council, Canada

### Motoyuki Ono

Japan Society for the Promotion of Science (JSPS), Japan

The training of young scientists has developed in an unprecedented manner over the last two decades. Already many students have studied abroad prior to completing their graduate degrees and this level of readiness for international exchange is even more marked for Ph.D. and postdoctoral training. It is not uncommon for postdoctoral researchers to move to a third country at the beginning of their tenure. Historic mobility barriers such as degree recognition or visa applications have been adequately addressed with the consequence that there is now a strong demand for programs which support research abroad. In this way, early career scientists themselves are a driving force for the globalization of science. While there is no doubt regarding the value of international research experience, many countries still struggle to encourage a greater rate of return at the young investigator stage. The purpose of this panel discussion is to pinpoint existing limitations and to identify new avenues for international careers. Important questions for the discussion are: Do domestic research and training initiatives need stronger international elements? Is there a need to intensify international collaboration in science to support career building? The discussants from Europe, Canada, and Japan will present ongoing efforts to increase the long term attractiveness of domestic research programs without sacrificing opportunities for international scientific collaboration and career building.

### Organiser

Guntram Bauer

Human Frontier Science Program, Germany

### Moderator

Ernst-Ludwig Winnacker

Human Frontier Science Program, France

<http://www.esof2010.org/schedule/1/4a>



## What would science look like if it were invented today?

4 July, h. 15.45 - 17.00, Dublino

**Daniel Mietchen**

Eurodoc, Germany

**Steven Mansour**

World Association of Young Scientists, Canada

The way researchers debate and publish scientific results, the way quality assurance works, the way research performance is assessed and funding granted has not changed substantially within the last decades. Researchers use digital media now - conventional mail has been replaced by email, conventional slides by screen presentations. It is faster and more convenient now, but structurally it is still the same.

The transition into the digital age did not go with a mainstream reflection on how to make best use of the tools which are available now. In this workshop, we will discuss how wikis and other collaborative environments (e.g. Google Wave), blogs and microblogs can enrich scientific communication, how public post-publication peer review and contribution-based metrics can work. Special focus will be put on how young researchers can benefit from Open Access and Science 2.0 tools.

In the same time, the session will be a showcase on how those communication tools for scientific interaction can work in practice. Experts will be connected online from all over the world to Torino to communicate with the participants which are physically present during the whole session, not just the discussion part.

### Organiser

Ludovic Garattini

Eurodoc, France

### Moderator

Alma Swan

Key Perspectives, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## Added value of structured doctoral training and postdoctoral mobility.

5 July, h. 09.00 - 10.15, Atene

**Zsolt Kajcsos**

KFKI Research Institute for Particle and Nuclear Physics, Hungarian Academy of Sciences, Hungary

**Mary Ritter**

Imperial College London, United Kingdom

**Heikki Ruskoaho**

Department of Pharmacology and Toxicology, University of Oulu, Finland

**Christian Unkelbach**

Psychologisches Institut, Heidelberg University, Germany

**Rachel Yuan Nong**

The Rudbeck Laboratory of Uppsala University, Sweden

High quality academic education, research and innovation are key to Europe's prosperity. In the globalised hunt for talent, organisations around the world are expanding from the classic master-apprentice doctoral model, to more stable frameworks, in order to raise the quality of their research, enhance the scientific training they deliver, promote networks of excellence among their researchers and faculty, and ensure the return of research investments to society. Now, who is succeeding at this challenge? What can we do to improve and disseminate good practices, so that the European Research Area becomes the best researchers' first choice? These and other questions shall be tackled by researchers and policy makers, with the interaction of the public. This session is linked to the European Science Foundation session "Is tenure track an attraction for young principal investigators?".

### Organiser

Vanessa Campo Ruiz

European Science Foundation, France

### Moderator

Marja Makarow

European Science Foundation, France

<http://www.esof2010.org/schedule/1/4a>



## Taking Your Passion for Science to a Career Away from Research

5 July, h. 09.00 - 10.15, Copenhagen

**Brianna Blaser**

AAAS/Science, USA

**Richard Weibl**

AAAS, USA

Could you be missing out on an exciting and rewarding career outside of academic or industrial research? Most individuals who pursue a career in science do so because they have a love for science. Once your training is done, can you bring that passion to a career beyond the research bench? Increasingly, Ph.D.-level scientists are becoming aware of fulfilling career opportunities beyond bench research. Join us at this workshop to consider what your own career path in these so-called "nontraditional" areas might look like. Looking closely at your skills, values, and preferences, as well as learning about the experiences of other scientists, can help you to identify the career path that's right for you. This workshop will also present ways to parlay your current skills and values into a new area and how to develop the skills you might need to follow your passion for science to a new career path.

### Organiser

Brianna Blaser

AAAS/Science, USA

### Moderator

Brianna Blaser

AAAS/Science, USA

<http://www.esof2010.org/schedule/1/4a>



## Is tenure track an attraction for young principal investigators?

5 July, h. 10.30 - 11.45, Atene

**Rafael Carazo Salas**

The Gurdon Institute and Department of Genetics, University of Cambridge, United Kingdom

**Natalie Sebanz**

Radboud University Nijmegen, The Netherlands

**Eero Vuorio**

Biocenter Finland, University of Helsinki, Finland

**Marino Zerial**

Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

**Johanna Backstrom**

Karolinska Institutet, Sweden

High quality academic education, research and innovation are key to Europe's prosperity. In the globalised hunt for talent, organisations around the world are expanding from the classic master-apprentice doctoral model, to more stable frameworks, in order to raise the quality of their research, enhance the scientific training they deliver, promote networks of excellence among their researchers and faculty, and ensure the return of research investments to society. Now, who is succeeding at this challenge? What can we do to improve and disseminate good practices, so that the European Research Area becomes the best researchers' first choice? These and other questions shall be tackled by researchers and policy makers, with the interaction of the public. This session is linked to the European Science Foundation session "Added value of structured doctoral training and postdoctoral mobility."

### Organiser

Vanessa Campo Ruiz

European Science Foundation, France

### Moderator

Marja Makarow

European Science Foundation, France

<http://www.esof2010.org/schedule/1/4a>



## Dual Career: how many computations to transform it into an advantage?

5 July, h. 10.30 - 11.45, Copenhagen

**Maria-Antonietta Buccheri**

Marie Curie Fellows Association, Belgium

**Giovanna Avellis**

InnovaPuglia, Italy

**Manuela Giovanetti**

Queen's University Belfast, School of Biological Sciences, United Kingdom

**Vanessa Diaz- Zuccarini**

University College of London, United Kingdom

The Green paper "Inventing our future together. The European Research Area: new perspectives" published last April by the EC identifies the need for "an adequate flow of competent researchers with high levels of mobility between institutions, disciplines, sectors and countries" as a major priority. Researchers mobility is beyond doubt a key condition for the development of the European scientific research for a number of reasons. Moreover, it represents a great opportunity for scientists in whatever stage of their career. Nonetheless, researchers mobility may hurt with their own personal lives. The issue becomes even harder if we consider that the proportion of dual-career couples is increasing among scientists.

The need for negotiating both careers becomes a source of discontent and often one of the two is affected considerably by the choices made. Mobility has demonstrated to be partly gender sensitive and this needs to be addressed in some way in order to ensure at least equal opportunities to male and female scientists regarding possibilities and benefits offered by mobility programmes.

A main presentation will give to the audience a general introduction on the topic, while three speakers will introduce their personal experiences. A debate will follow and participants will be invited to report personal observations, making comments and boosting suggestions.

### Organiser

Maria-Antonietta Buccheri

Marie Curie Fellows Association, Belgium

### Moderator

Vanessa Diaz- Zuccarini

University College of London, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## The world needs science... Science needs women

5 July, h. 12.00 - 12.45, Londra

### **Renée Clair**

Division of Basic and Engineering Sciences, UNESCO, France

### **Ada Yonath**

2008 FWIS Laureate for Europe and 2009 Nobel Laureate in Chemistry, Israel

### **Jennifer Campbell**

Secretary General, The L'Oréal Corporate Foundation, France

### **Federica Migliardo**

2008 FWIS International Fellow and Università di Messina, Italy

Women in scientific research are still a minority, accounting for only 30% of researchers in the EU in 2006. Women's academic careers remain markedly characterized by strong vertical segregation: the proportion of female students (55%) and graduates (59%) exceeds that of male students, but women represent only 44% of grade C academic staff, 36% of grade B academic staff and 18% of grade A academic staff (Source She Figures, 2009). These data point out that the "glass ceiling" still exists. What are the reasons for this "brain-drain" among women in academia? And which are possible solutions?

In this session, through the experience of the speakers, we would like to provide innovative answers to these questions in order to attract young women to science and to give a voice to exceptional women in science who are helping to change the world. This is the mission that has joined L'Oréal and UNESCO since 1998 with the creation of the For Women in Science Programme, which has to date recognized and supported over 900 women scientists worldwide.

### **Moderator**

Sylvie Coyaud

Journalist, Italy

<http://www.esof2010.org/schedule/1/4a>



## Pizza with the prof

5 July, h. 13.00 - 14.00, Other

**Sam Auinger**

(composer), Germany

**Angelika Brandt**

Zoological Museum, Hamburg, Germany

**Massimiano Bucchi**

Università di Trento, Italy

**Tecumseh Fitch**

University of Vienna, Austria

**Felicitas Paus**

CERN, Switzerland

**Nancy Van Osselaer**

Johnson & Johnson, Belgium

**Anton Zeilinger**

University of Vienna, Austria

**Max Craglia**

Spatial data infrastructures unit, Joint Research Center, European Commission, EU

<http://www.esof2010.org/schedule/1/4a>



## A career that's out of this world! The insider's guide to working in space exploration

5 July, h. 14.15 - 15.30, Atene

### **Bernard Foing**

European Space Agency, European Space Research and Technology Centre (ESTEC), The Netherlands

### **Helen Walker**

Science and Technology Facilities Council, United Kingdom

### **Ester Antonucci**

IFSI (Istituto di fisica dello Spazio Interplanetario) - INAF (Istituto Nazionale di Astrofisica), Italy

Space exploration is an inspiring, diverse and challenging field of research in which Europe is playing an increasingly important role. With roadmaps currently under development for returning astronauts to the Moon and a human mission to Mars, the next generation of scientists will have the opportunity to play a critical role in the story of mankind's exploration of the Solar System. In the meantime, robotic missions and ground based telescopes are giving us access to a plethora of data about planets, moons, comets and asteroids, radically reshaping our ideas about our place in the universe and the origins of life. These activities are backed up by laboratory and field experiments, giving us new insights into our planet, the future of our environment and the unlikely places that life can evolve. Space exploration is a truly interdisciplinary field, spanning the physical and life sciences as well as engineering. In this round-table discussion, we will bring together some of the leading figures in European space research to share their experiences (both in science and in public outreach), give an overview of the potential career paths for young scientists and give an insight into future plans for exploring our planetary neighbourhood.

### **Organiser**

Anita Heward

Europlanet RI, United Kingdom

### **Moderator**

Steven Miller

University College London, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## Project management for young researchers: A fallacy spelled out

5 July, h. 14.15 - 15.30, Copenhagen

**Natalia Balcázar**

ENVIROpro – European Environmental Project Management, Germany

**Frank Heemskerk**

Research & Innovation Management Services bvba, Belgium

A popular saying goes: “A well defined problem is half solved”

Yes, this is what a ‘Project Manager’ brings to researchers facing constant challenges when dealing with large research projects. Researchers stand a much higher likelihood of success if they incorporate and embrace that structure that Project Management brings them.

Projects are unique, transient endeavours undertaken to achieve a desired outcome or goal, with teams (PhD students, post-docs, permanent researchers, technicians, etc.) assigned for the duration of the project and strict attention paid to scheduling and budget.

Typically, most research projects suffer from planning problems, as well as delays in development, unforeseen activities, cost overruns, and even losses resulting from high turnover.

A project left to its own devices is headed toward failure. “ Structured project management is needed when you have “ project strings going in several directions at once”, says Victoria McGovern, programme officer for infectious diseases at the Burroughs Wellcome Fund in Research Triangle Park, North Carolina. “It ensures that important things don’t get shoved to the back of the bench when more urgent things come up,” she says.

In the first part of the meeting, qualified speakers will provide the basics on Project Management and how to plan and manage and report a project with practical examples. In the second part, the audience will be invited to pose questions and comment on the first part.

### Organiser

Maria-Antonietta Buccheri

Marie Curie Fellows Association, Belgium

### Moderator

Frank Heemskerk

Research & Innovation Management Services bvba, Belgium

<http://www.esof2010.org/schedule/1/4a>



## Passionate about research? Funding opportunities in Europe for creative minds from anywhere in the world.

5 July, h. 15.45 - 17.00, Atene

### Andre Mischke

Institute for Subatomic Physics, Faculty of Science, Utrecht University, The Netherlands

### Pauliina Damdimopoulou

Department of Biosciences and Nutrition, Karolinska Institutet, Sweden

### Massimo Gaudina

European Research Council, Belgium

### Eleni Zika

European Research Council, Belgium

### Louise Byrne

Research Executive Agency, Belgium

The workshop aims to present funding opportunities for first-class, up-and-coming researchers, who are keen to develop and fast-track their careers in Europe. The Marie Curie Actions (MCA) and the European Research Council (ERC) offer such funding in a complementary way: whereas the first provides fellowships for career development at post-graduate and post-doctoral level for excellent mobile researchers, the second offers attractive grants to promising post-doctoral researchers enabling them to establish or consolidate themselves as independent leaders of a research team. Since 1996, MCA have played a central role in the European Research Area by improving researchers' careers and promoting their mobility. Created in 2007, the ERC reflects a substantial step in the way Europe manages its research base to progress towards the Lisbon targets. By challenging the brightest minds, both ERC and MCA grants will help broaden Europe's knowledge base and will help to bring about new discoveries to meet tomorrow's global challenges. Both funding schemes are open to researchers of any nationality and encourage talent from further afield to settle in Europe. The workshop will explain the aim and synergies of the two funding schemes as well as provide answers to practical questions. In addition, Marie Curie Fellows and ERC Starting Grantees will be present to share their experiences with these funding initiatives and will answer questions from the audience.

### Organiser

Samantha Christey

European Research Council, Belgium

### Moderator

Massimo Gaudina

European Research Council, Belgium

<http://www.esof2010.org/schedule/1/4a>



## Getting to the Top of a Big Pile

5 July, h. 15.45 - 17.00, Copenaghen

### Markus Behnke

Division Chemistry and Process Engineering, German Research Foundation,  
Germany

### Vittoria Colizza

ISI Foundation, Italy

### Guntram Bauer

Human Frontier Science Program, France

Success as a scientist requires a combination of talent, skills, and resources. Competition for funding demands the ability to persuade funding agencies that the research activities you are proposing merit a slice of the available funds. Making this case requires more than a good CV and publication record. Writing a clear, concise, and persuasive proposal that reflects the intellectual merit of your project and demonstrates your team's capacity to see it through is essential. This Science Careers workshop will explore the do's and don'ts of grant-writing and the often subtle differences between a winning and a rejected proposal.

### Organiser

Brianna Blaser

AAAS/Science, USA

### Moderator

Brianna Blaser

AAAS/Science, USA

<http://www.esof2010.org/schedule/1/4a>



## Special Session/Press Conference (in italian): Il precariato della ricerca in Italia

5 July, h. 15.45 - 17.00, Other

### Marco Allegra

University of Torino, Italy

La precarietà negli atenei torinesi e a livello nazionale /1

### Francesco Pescarmona

Politecnico di Torino, Italy

La precarietà negli atenei torinesi e a livello nazionale/2

### Enrico Arnone

University of Bologna, Italy

La carriera universitaria vista da un percorso misto Italia-estero

### Claudio Franchi

Università di Napoli 'L'Orientale', Italy

Giovani ricercatori in Italia e in Europa: Prospettive a confronto.

Il progetto di riforma dell'Università proposto dal ministro Gelmini ha riaperto il dibattito sul ruolo delle forme di lavoro precario – assegni di ricerca, borse di studio, collaborazioni a progetto, docenze a contratto, ecc. – negli atenei italiani, moltiplicatesi negli ultimi anni per far fronte alle esigenze della formazione e della ricerca.

Da un lato la riforma – che si prevede “senza alcun onere aggiuntivo” per la spesa pubblica – comporterà una forte riduzione dei finanziamenti all'università; dati gli ineliminabili vincoli legati alle spese correnti, gli effetti dei tagli saranno scaricati in buona parte sui lavoratori a tempo determinato. Dall'altro la riforma metterà in esaurimento dell'attuale figura del Ricercatore, e la sua sostituzione con quella del Ricercatore a Tempo Determinato, che prevede due contratti triennali prima della possibilità di entrare in ruolo come Professore Associato.

Qual è la realtà del lavoro precario nell'università italiana? In che misura essa rappresenta un caso a sé nel panorama europeo? In che modo la riforma che è oggi in discussione modificherebbe il funzionamento degli atenei italiani?

### Organiser

Paolo Ariano

University of Torino, Italy

### Moderator

Paolo Ariano

University of Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



**B** Biotech, pharma industry and the academic world: why do they need each other and why is this needed for the benefit of society/patients

3 July, h. 09.00 - 11.45, Parigi

**Elena Cattaneo**

Director, Laboratory of Stem Cell Biology and Pharmacology of Neurodegenerative Diseases, University of Milano, Italy

**Michele Mondini**

CEO, NotoPharm, Italy

**Chris Torrance**

CEO, Horizon Technologies, UK

**Ludo Lauwers**

Senior Vice-President, Beerse R&D Site Manager, Johnson & Johnson Pharmaceutical Research & Development, a division of Janssen Pharmaceutica NV, Belgium

**Massimo Boriero**

President, Biotechnology Group, Farmindustria, Italy

**Silvio Aime**

President, 2i3T University of Torino Incubator, Italy

**Giancarlo Rocchietti**

Chair, Piemontech, Italy

The session is organised in partnership with Johnson and Johnson PRD a Division of Janssen Pharmaceuticals, Bioindustry Park Bi.P.Ca, the Innovation Cluster bioPmed, 2i3T the University of Turin incubator, the Biotechnology Foundation Turin, the Molecular biotechnology Center – University of Turin and Farmindustria.

Goal of the session is to discuss the importance of the value chain of biotech and pharma industry in order to discuss the roles for all actors and to explain why it is so important for society that the value chain works, underlining which is the role and importance of scientists, particularly young scientists. All actors involved share similar problems that can influence their activity and development. The panel will represent different actors that compose the value chain of biotech and pharma in the following fields: Research; Start-ups; Venture Capitalists; Pharma Industry; Cluster.

**Organiser**

Lorenza Accusani

Science communicator, Italy

**Moderator**

Maurizio Mariani

Bioindustry Park Silvano Fumero Spa and bioPmed Innovation Cluster, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Innovation beyond the lab: sciences and the service sector

5 July, h. 09.00 - 11.45, Istanbul

**Ki Andersson** Public & Science, Sweden

**Adam Afriyie** Member of Parliament, United Kingdom

**Jorgo Chatzimarkakis** Member of the European Parliament, Germany/Belgium

**Luke Georghiou** Manchester Business School, University of Manchester, United Kingdom

**Richard Hudson** CEO and Editor, Science|Business Publishing Ltd., Belgium/United Kingdom

**Nikola Macharova** Alexander Dubcek University of Trencin, Slovakia

**Allan Simpson** Managing Director, PlayVision AB, Sweden

**Mary Walshok** University of California, USA

**Francesco Lovo** Research and Development Director, PININFARINA EXTRA SRL, Italy

Businesses need new knowledge in many areas to innovate, develop and succeed. But where should new ideas come from? Many enterprises can benefit greatly from research carried out in our universities.

The service sector, which employs 2/3 of the European work force, is rarely involved in research collaborations. High-tech industries that benefit so much from scientific innovations seldom seek help from universities in other areas, such as management or customer relations.

University knowledge extends far beyond the spheres of natural sciences, medicine and technology traditionally associated with university-business collaboration. There is a huge amount of untapped research going on in e.g. management schools and social science departments across Europe.

How can we cross the cultural divide and help industry to benefit from this knowledge? Many companies are not even aware that there is research being carried out in their field. Service sector companies in particular have no culture of in-house research and little contact with universities. How can we bridge the gap? What can be learned from successful collaborations in the science and technology sectors? Can the Open Innovation paradigm be utilised? How can policy makers and the media help?

This interactive session is inspired by a study carried out by the Swedish association Vetenskap & Allmänhet into the relationship between the business and academia, and also draws on similar studies and experiences from across Europe.

### **Organiser**

Ki Andersson Public & Science, Sweden

### **Moderator**

Camilla Modéer Secretary-General, Public & Science, Sweden

Carl Johan Sundberg Unit for Bioentrepreneurship, Karolinska Institutet, Sweden

<http://www.esof2010.org/schedule/1/4a>



## **B** Life sciences, scientists and regional development: does the international dimension matter?

5 July, h. 09.00 - 10.15, Dublino

### **Valerie Ayache**

Managing Director, ADEBAG Grenoble, France

### **Claire Skeltenbery**

Network Manager, Council of European BioRegions, United Kingdom

### **Monserrat Vendrell**

CEO, Bioregò de Catalunya, Spain

The development of life sciences is also based on the development of bioclusters where biotech companies can develop. In bioclusters the engine of growth is the capability to transform science and scientific results into innovative products, processes and services following a triple helix model of development. The regional development is passing through the exploitation of such engine in order to create new companies, new job places and to support the industrial growth. But, at the same time, two opposite forces are in place: from one side the pressure on economic aspect of activities is affecting the level of investment inside a cluster, from the other side the role of globalisation is affecting the development of the cluster.

Several initiatives are in place at different levels in order to exploit advantages that, for the regional development of science and industry, can arise from a global strategy in order to overcome local limits to the development.

Goal of the workshop will be to discuss the state of the art of such initiatives at local and international level (EU funded projects) and to discuss the real consequences of such initiatives at territorial level. A second goal will be to discuss which practical advantages derive from such initiatives for the development of science, scientist and innovative start-ups. The third goal will be to discuss whether the implementation of such initiatives is affecting problems such as the attraction/retention of scientific talents.

### **Organiser**

Fabrizio Conicella

General Manager, Bioindustry Park Silvano Fumero Spa - bioPmed innovation cluster, Italy

### **Moderator**

Elena Spoldi

Fondazione per le Biotecnologie, Italy

<http://www.esof2010.org/schedule/1/4a>



## B

### Support programmes for commercialisation of research results in knowledge based economies - The example of the Innovation Forum International

5 July, h. 10.30 - 11.45, Dublino

**Carsten Guenther**

CTO, Heidelberg mobil International GmbH, Germany

**Andrew Reddick**

National Research Council, Canada

This session, organised by MFG Baden-Württemberg, will focus on approaches and support actions for the commercialisation of research results through concrete best practices such as the "Innovation Forum International". As a starting point, MFG will give a short overview on its support programmes, which range from special scholarships over technology marketing to management coaching groups. Over the past 14 years MFG has proved to be a strong partner in the area of technology transfer by initiating various innovation fostering initiatives. An example will be presented: The Heidelberg Innovation Forum (HDI) offers ICT researchers and start-ups a platform to present their ideas to investors and partners in an extremely efficient way. The session will be joined by a speaker from the National Research Council (NRC), Canada, where MFG's concept was promoted and adopted into the "New Brunswick Innovation Forum". This cooperation was the starting point for setting up the global umbrella brand "Innovation Forum International". MFG and the NRC would like to share their experience on international collaboration and show ways for other regions on how to co-operate in a competing global market. Additionally, an example for the effectiveness of the Innovation Forum International will be given: The company "Heidelberg mobil International" has first benefited from the HDI by presenting its business ideas, gained funding and then made a successful presentation at the "Canada Open House".

#### Organiser

Valentina Grillea

MFG Baden-Württemberg MbH, Germany

#### Moderator

Matthias Holzner

MFG Baden-Württemberg MbH, Germany

<http://www.esof2010.org/schedule/1/4a>



## Showcase: South Africa - a strategic science and technology partner for Europe

5 July, h. 12.00 - 12.45, Roma

### **Aggrey Ambali**

Director, New Partnership for Africa Development, South Africa

### **Tshepo Seekoe**

Chief Director Radio Astronomy Advances, South African Department of Science and Technology, South Africa

### **Jean-Francois Girard**

President, Institut de Recherche pour le Development, France

### **Mmboneni Muofhe**

Chief Director International Resources, South Africa Department for Science and Technology, South Africa

South Africa is one of Europe's strategic partners for international S&T cooperation, and is one of the most active "third country" participants in the EU Framework Programmes for Research, with a rich

and diverse range of bilateral research and innovation partnerships with Europe.

These collaborations have significantly advanced global scientific enterprises, including to address shared global challenges, such as climate change mitigation and adaptation, fighting communicable diseases or supporting food security. The session will be presented by the European South African Science and Technology Advancement Programme (ESASTAP), a dedicated platform to promote cooperation with Europe, of the South African Department of Science and Technology, supported by the European Commission. The panel discussion will highlight success stories of existing cooperation, new opportunities for and instruments to support cooperation, as well as the strategic interface of scientific partnerships with economic and development collaboration. In this context, S&T cooperation, e.g. in intelligent transport systems, related to the organisation of the FIFA World Cup will be highlighted.

Discussions will also consider how cooperation supports broader African - European science partnerships.

### **Organiser**

Daan Du Toit

South African Department of Science and Technology, South Africa

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: Compost - from waste to resource, from research to business

5 July, h. 12.00 - 12.45, Atene

**Massimo Pugliese**

Agroinnova - Università di Torino and AgriNewTech s.r.l., Italy

**Maria Lodovica Gullino**

Agroinnova - Università di Torino and AgriNewTech s.r.l., Italy

**Angelo Garibaldi**

Agroinnova - Università di Torino and AgriNewTech s.r.l., Italy

Biomasses like the biodegradable fraction of Municipal Solid Waste (MSW) and green waste are generally converted into compost. Compost is widely recognised and used in agriculture as fertilizer to improve soil fertility. Moreover, some composts were found to be suppressive against several soilborne pathogens in various cropping systems. Soilborne plant pathogens are responsible for many diseases of economically important crops that can result in severe losses. Economic losses due to soilborne pathogens are estimated at 10-20% of the attainable yield for many crops, and the monetary losses due to soilborne diseases could reach million of euros per year. An increase of some plant diseases due to compost usage has also been demonstrated, since compost is a product that varies considerably in chemical, physical and biotic composition, and, consequently, also in ability to suppress soilborne diseases. For this reason, the antagonistic activity of biological control agents, like *Trichoderma* spp., could be used efficiently to increase the level of reproducibility of suppressiveness properties of compost.

Agroinnova developed a methodology to evaluate composts quality and in particular the suppressiveness against plant pathogens. Moreover Agroinnova selected microorganisms that are able to increase compost suppressiveness and lead to a bio-fertilizer able to control a wide range of soilborne pathogens. Results lead to the development of an innovative spin-off: AgriNewTech.

### **Organiser**

Massimo Pugliese

Agroinnova - Università di Torino and AgriNewTech s.r.l., Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: Global Comparison of Public R&D Programmes in the Automotive Sector

5 July, h. 12.00 - 12.45, Dublino

**Alexander Holleis**

AVL List GmbH, Austria

**Simon Wrigley**

Ricardo UK Ltd., United Kingdom

**Thilo Bein**

Fraunhofer Institute for Structural Durability and System Reliability, Germany

The session is based on the outcomes of the project EAGAR: “European Assessment of Global Publicly Funded Automotive Research – Targets and Approaches”. EAGAR, which is supported by the EU’s Seventh Framework Programme, benchmarks the current public automotive research activities at an international level, in particular the European Union and selected Member States with the United States, Canada, Japan, South Korea, India, China and other emerging economies. EAGAR identifies the national road transport visions and roadmaps, research priorities, supported key topics, technology pathway, as well as the level of investment. This enables a direct comparison of national automotive R&D policies relating to the environment (energy, CO<sub>2</sub>, pollution, recycling, noise), safety, congestion and economic competitiveness. The session will present and discuss a key perspective on global investments designed to improve automotive technologies for a greener, safer and smarter road transport system.

It will assist in defining the future direction of the European automotive sector and benefit the competitiveness of Europe and enables the stakeholders to adjust its visions & plans for the future. In any case a very exciting topic in very challenging times, and not only for automotive stakeholders.

### **Organiser**

Alexander Holleis

AVL List GmbH, Austria

### **Moderator**

Alexander Holleis

AVL List GmbH, Austria

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: The Nordic Top-level Research Initiative – a model for co-operation in Europe?

5 July, h. 12.00 - 12.45, Copenhagen

**Gunnel Gustafsson**

Director, NordForsk, Norway

**Riitta Mustonen**

Vice President, Academy of Finland, Finland

**Halldór Ásgrímsson**

Secretary-General, Nordic Council of Ministers, Denmark

**Marit Larsen**

CEO, Tel-Tek, Norway

**Jerzy Langer**

Polish Academy of Science, Poland

**Rolf Annenberg**

Director-General, Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), Sweden

In 2008 the Nordic prime ministers initiated a joint Nordic program on top research and innovation with a focus on climate and energy. As a joint venture between business and science it provides an example of what should be prioritized on the European level, namely challenge responding issue oriented research and innovation. It is organized in cooperation between NordForsk, Nordic Innovation Centre and Nordic Energy Research, which are platforms for Nordic co-operation in research, innovation, and energy respectively. The Top-level Research Initiative is the largest joint Nordic research and innovation venture ever. It includes a broad range of programs, from basic research to innovation and development. The ambition is to produce results through co-ordination and dialogue between researchers in the five countries across different climate and energy themes, involvement of national agencies across the five countries, and through involvement of industry and other knowledge producers and users in the field. One of the ambitions is that the combination of top research and close cooperation between all relevant actors will make the Nordic region a forerunner in Europe and globally with regard to environmental concerns, not least the achievement of CO2 reduction goals. The presentation and discussions will focus on what lessons can be learned from the Nordic Top-level Research Initiative, and if it might be used as a model for co-operation in Europe.

### **Organiser**

Anne Riiser

NordForsk, Norway

### **Moderator**

Rolf Annenberg

Director-General, Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), Sweden

<http://www.esof2010.org/schedule/1/4a>



## **B** A new model for bringing bioscience from the bench to the market

5 July, h. 14.15 - 15.30, Roma

**Sascha Bucher**

F. Hoffman La Roche, Switzerland

**Rony Douek**

Independent Venture Advisor and Board Member, USA

**Hoyoung Huh**

President & CEO, BiPar Sciences, USA

**Carl Johan Sundberg**

Unit for Bioentrepreneurship, Karolinska Institutet, Sweden

As we slowly emerge from the Great Recession, new models are emerging for bringing novel bioscience from the bench to the market. One model that is capturing the attention of investors and entrepreneurs in this field, as well as the big pharma firms that so urgently need innovative new biotech products to sustain growth, is the "micro startup" model. This model could also prove to be important for universities and nonprofit technology transfer offices, which stand to benefit hugely from the revenue and notoriety that they receive from royalties from successful life science products—IF these technologies can make the transition from scientific breakthrough to product breakthrough.

### **Organiser**

Stephan Herrera

Red Kayak Consulting llc, USA

### **Moderator**

Stephan Herrera

Red Kayak Consulting llc, USA

<http://www.esof2010.org/schedule/1/4a>



## **B** Creative Industries from Science to Business!

5 July, h. 14.15 - 15.30, Dublino

**Sergio Duretti**

CSP-INNOVAZIONE nelle ICT s.c.a.r.l., Italy

**Volker Helzle**

Film Akademie B-W, Institute of Animation, Germany

**Silvana Molino**

Microcinema SpA, Italy

**Ute Hillmer**

MFG Baden-Württemberg MbH, Germany

The session, organized by the CReATE consortium, will focus on ICT technologies applied to Creative Industries and connected research priorities. CReATE works as “motor” to link ICT-research with SMEs in Creative Industries. Due the involvement and collaboration of regional firms and researchers, the innovation potential at the intersection of ICT and Creativity is already given at hand within the process. The CReATE project and its outcomes with EU-wide impacts will be presented in this session as good practice (showcase) for the development of common (R&D) goals and projects between university (science) and industry (business) based on companies’ needs and universities’ capacities and related to global trends (technological and market developments).

Research priorities with future impact on Creative Industries will be presented, and experts from science and business will give an insight into their experiences, lessons learnt as well as future conditions and challenges for technological transfer. Through the good practices presented by the speakers and the moderated discussion about concrete characteristics of strategic (trans-) regional university-industry relationships, ways for strategic collaboration will be depicted. The topic is strongly related to the communication of the European Commission “Improving knowledge transfer between research institutions and industry across Europe: Embracing open innovation”, which is also a main aim of the CReATE.

### **Organiser**

Martina Groeschel

MFG Baden-Württemberg MbH, Germany

### **Moderator**

Ute Hillmer

MFG Baden-Württemberg MbH, Germany

<http://www.esof2010.org/schedule/1/4a>



## **B** Do Companies need Mathematics?

5 July, h. 15.45 - 17.00, Roma

**Nevio Di Giusto**

CEO and General Director, Centro Ricerche FIAT, Italy

**Magnus Fontes**

Lund University of Technology, Sweden

**Yvon Maday**

University Pierre and Marie Curie, France

**Volker Mehrmann**

TU Berlin, Germany

The panel discussion aims at pointing out the potential of innovation that could originate from an organic cooperation between research in Applied Mathematics and Companies.

Three of the participants are currently chairing three Working Groups in the framework of a Forward Look project supported by the European Science Foundation. Many of the themes covered by the project will be presented in order to analyze the situation in Europe, the measures that should be taken, the obstacles, the opportunities.

The session is focussed on two main issues: 1) To state that in "knowledge-based economy" INNOVATION is a key factor. Consequently, an intense interaction between the world of research and the world of production is necessary.

2) To provide examples in which Mathematics proved to be an essential tool in this sense, also for its capacity of promoting a multidisciplinary approach.

### **Organiser**

Mario Primicerio

Università di Firenze, Italy

### **Moderator**

Thibaut Lery

European Science Foundation, France

<http://www.esof2010.org/schedule/1/4a>



## The STARTENT Project: a case study on university-business collaboration for entrepreneurship education in Europe

5 July, h. 15.45 - 17.00, Dublino

**Michelle Perello**

Consulta Europa, Spain

**Emilijan Enev**

Executive Director, Bulgarian-Romanian Chamber of Commerce, Bulgaria

**Paraskevas Evripidou**

University of Cyprus, Cyprus

**Emilio Paolucci**

Politecnico di Torino, Italy

The objective of the session is to present a successful business-university cooperation model for entrepreneurship education implemented within an EU project.

The STARTENT project aims to develop the entrepreneurial culture of young people and improve entrepreneurship education in Europe through a partnership between universities and businesses based on an innovative collaboration model. The project focuses particularly on the knowledge-based economy sector, supporting high-tech entrepreneurship, facilitating spin-offs and innovative start-ups as well as helping researchers acquire entrepreneurial skills. The STARTENT consortium consists of 10 organizations representing universities and businesses from 8 EU Member States.

The panel will be composed of the representatives of the project, addressing: The university-business cooperation model developed in the project and the main results achieved; Difficulties encountered in university-industry relationships and how these can be overcome; Good practices on exploiting research results in the market (high-tech entrepreneurship); Hands-on experience on current supporting mechanisms for potential business (incubators, spin-offs, etc.)

### Organiser

Michelle Perello

Consulta Europa, Spain

### Moderator

Omer Ceylan

Consulta Europa, Spain

<http://www.esof2010.org/schedule/1/4a>

**B** Showcase: The human side of Innovation

5 July, h. 17.15 - 18.00, Roma

**Maurizio Tirassa**

Università di Torino, Italia

**Marco De Marie**

Compagnia di San Paolo, Italy

**Alessandro Furfaro**

Azimut Benetti Yacht, Italy

**Luca Sburlati**

Azimut Benetti Yacht, Italy

In this session we will outline research conducted at the University of Torino on the complex, non-linear dynamics relating human resource management to the innovation profile of companies. The outcome of this research showed that, and how, certain crucial facets of training and education in firms indeed are correlated to innovation. Interestingly, the processes with which these activities are managed turned out to be at least as important as the activities themselves.

Representatives of the management of the human resources and of the production line of a major Piedmontese firm will discuss the main topics and outcomes of this research as relevant to their organization and to the real environment in which it operates. The management of a major Piedmontese institutional organization will do the same in the broader light of the social and economical Piedmontese environment. We believe that the discussion will be relevant not only to the local territory, but to any context in which analogous processes are taking place.

**Organiser**

Maurizio Tirassa

Università di Torino, Italia

<http://www.esof2010.org/schedule/1/4a>

**B** Showcase: Ultrafast Science

5 July, h. 17.15 - 18.00, Atene

**Daniele Cocco**

Sincrotrone Trieste S.C.p.A., Italy

**Mauro Zambelli**

Kyma Srl, Italy

How is energy transferred from one atom to another? What happens during a chemical reaction at the moment a bond is broken? How does one observe in real time the steps that enable a drug molecule to bind to its protein receptor? With the construction of new light sources in several European countries we are now beginning to understand these and many other questions on the dynamics of nature. These light sources are powerful and fast enough to capture transformations on time scales as short as the oscillations of a molecule. They are based on the Free Electron Laser (FEL) and will enable the scientific and industrial communities to observe the dynamic behaviour of materials. Through this technology it will be possible to take a sequence of snapshots from which, in turn, a true movie of a process underway will be generated: from heat-wave propagation to biological membrane growth to catalytic reactions, and many others. But what is a FEL? How does it work? And what kind of basic and applied research will it enable? If you work in nanotechnology, cultural heritage, physics or other research areas... or if you simply want learn more about the FEL world and what new questions about matter might be addressed in the future, this session may be for you. This will be done through the voice of FEL experts and through a flight into the new Italian FEL, Fermi@Elettra, currently under construction and commissioning in Trieste.

**Organiser**

Laura Bibi Palatini

Sincrotrone Trieste S.C.p.A., Italy

**Moderator**

Maurizio Melis

Radio 24, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: Collegio Carlo Alberto - Committing to Research in Social Sciences

5 July, h. 17.15 - 18.00, Dublino

### **Igor Prünster**

Università di Torino and Collegio Carlo Alberto, Italy

### **Pietro Garibaldi**

Università di Torino and Collegio Carlo Alberto, Italy

### **Filippo Taddei**

Collegio Carlo Alberto, Italy

The Collegio Carlo Alberto was created in 2004 by the joint effort of Compagnia di San Paolo and University of Torino. Its mission is to foster research and advanced training in economics, finance and political science.

The Collegio shares the values and best practices of the international academic community by offering a new model of integration between the public objective of basic research and private funding. While the majority of the senior faculty comes from the University of Torino, junior faculty is hired independently by the Collegio in the international academic job market. With the addition of visiting scholars from some of the top research centers worldwide, the Collegio offers a dynamic research environment.

The Collegio also promotes high end education: the Allievi Program. The Allievi are outstanding students of the University and Politecnico of Torino who, in addition to fulfilling their university requirements, participate to courses and seminars offered at the Collegio in order to acquire a thorough intellectual training in Economics and Statistics.

### **Organiser**

Caterina Ginzburg

Collegio Carlo Alberto, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: Nanotechnology and Light - from Nanomedicine to Solar Cells

5 July, h. 17.15 - 18.00, Copenaghen

**Giuseppe Caputo**

Centro Interdipartimentale di Eccellenza NIS - Università di Torino and Cyanine Technologies SpA, Italy

**Salvatore Coluccia**

Università di Torino, Italy

Nanomaterials are becoming more and more used in several high-tech applications. In recent years Cyanine Technologies, in collaboration with the most active piedmontese research centres in the field of nanotechnology, developed a wide range of nanomaterials for two different applications: nanomedicine and photovoltaics. The term “nanomedicine” is today frequently used when talking about innovative technologies applied to diagnostics, therapy, or more generally in Life Sciences. The use of nanoparticles that could simultaneously detect a pathological marker, release a drug against that pathology and follow the fate of the sick cell or tissue is a unique and powerful tool for tomorrow medicine.

Another hot topic is related to the improvement of available technologies for renewable energies: a low-cost approach has to be always preferable in order to reach the mass production threshold from which a global diffusion could consequently start. A material which could be taken into account is nanostructured titanium dioxide, quite common in white paintings and of very low cost, showing photovoltaic efficiencies larger than 10% when associated to a solar radiation absorbing dye. These new types of cells can be fabricated by simple chemical methods and are using nanotechnology in a very pioneering way.

### **Organiser**

Giuseppe Caputo

Centro Interdipartimentale di Eccellenza NIS - Università di Torino and Cyanine Technologies SpA, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** In search of a new model of innovation: the effective network between knowledge, finance and entrepreneurship

6 July, h. 09.00 - 10.15, Roma

**Alberto Onetti**

Chairman, Mind the Bridge Foundation, USA

**Ilana Gross**

Program Director Matimop - Israeli Industry Center for R&D, Israel

**Reshma Sohoni**

CEO, seedcamp, United Kingdom

**Gianluca Dettori**

Chair, Dpixel, Italy

During the last decade, the traditional business corporation, emerged in the early 20th century, is facing dramatic changes, concerning the internal organisation, the crucial assets and the productive structure.

The traditional approaches to finance based on market imperfections, and the macroeconomic development policies based only upon human capital, are not adding anything new for the analysis and the comprehension of the complex innovative processes of firms, regions and nations.

We sustain that if the nature and the operation of firms are changing, also the traditional way to analyse these problems needs to change.

We want to stimulate discussion and exchange of ideas and experiences in an interactive panel, with the aim to develop a completely original model of network, between the investment dynamics of the firms (namely how firms capture growth opportunities), the strategic role of knowledge (that is not only human capital), and finance. In this way, finance will not be anymore an exogenous factor with respect to the innovation process, with the consequent effect of credit rationing, but can become legitimately a subject of the endogenous complex innovative process.

Trough our panel of entrepreneurs, financiers, scholars and policy makers, we would provide a new interpretation of financing innovation going towards a more complete analysis of production, transaction and investment.

### **Organiser**

Dario Peirone

CEO, JSTONE Srl, Italy

### **Moderator**

Dario Peirone

CEO, JSTONE Srl, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Venture Capital: 3D experience on how VCs back promising and innovative business ideas

6 July, h. 09.00 - 10.15, Dublino

**Riccardo Triolo**

The Venture Capitalist (Innogest SGR), Italy

**Dino Mascia**

The Director, Italy

**Filippo Chiariglione**

The Entrepreneur (SmartRM srl), Italy

Goal of the session is to share the main principles of Venture Capital (VC) with the audience and to show how VC can back promising and innovative business ideas. There will be two different moments.

The first part will be strongly interactive: a case study dressed up as a theatrical scene, in which a real venture capitalist will meet a real would-be entrepreneur. A theatre director will manage the interaction and guide the “actors” to make it easier for the audience to understand what is going on, and which are the main issues one has to face during this type of confrontations.

In the second part an expert will provide a brief explanation of what VC is, and how it operates with reference to what just happened in the scene. The expert will talk about the objectives and strategies of VC funds, investments criteria, and the interaction between VCs and companies.

### **Organiser**

Federico Sarti

I3P - Innovative Companies Incubator Politecnico di Torino, Italy

### **Moderator**

Federico Sarti

I3P - Innovative Companies Incubator Politecnico di Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** European Research&Business Speed Dating

6 July, h. 09.00 - 11.45, Other

The European Research & Business Speed Dating is a brokerage event aiming at facilitating the cooperation opportunities between research & business through planned bilateral meetings. The one to one meetings are primarily aiming at encouraging the building of consortia to participate in projects co-financed by the 7 Framework Programme (FP7), the main financial tool to support research and development activities in Europe. The brokerage event is a unique opportunity for companies, research centres and universities to meet potential partners for research projects, cooperation agreements and technology transfer.

Pre-registration required, please see details in the relevant page.

### **Organiser**

Torino Chamber of Commerce

Union of Chambers of Commerce of Piedmont In the framework of the Enterprise Europe Network

<http://www.esof2010.org/schedule/1/4a>



## **B** The different perceptions of patents

6 July, h. 10.30 - 11.45, Roma

**Valentina Predazzi**

Società Italiana Brevetti SpA, Italy

**Wolfram Foerster**

Principal Director, DG1 Business Services, European Patent Office, The Netherlands

**Gary Tanigawa**

Nixon and Vanderhye p.c., USA

Sib's speaker opens the session discussing various observations, which represent the major doubts on the overall patent system, recently made by the European Commission.

Sib will explain in deep the patenting ratio and highlight that, although sometimes wrongly used, the patent system core is the detailed publication of the innovation patented, which teaches the invention and hence allows further technical progress in the related technical field. The critical view of the patent system, and the major criticisms raised by European commissions will be the basis of the speech.

The second speaker of the panel, an EPO officer, will present, based on EPO figures and statistic data, the correlation between scientific progress and patenting. EPO will also provide a showcase on emerging technologies (e.g. nanotechnologies), analysing the relationship between the birth and evolution of said technologies and their time-relation between the patenting thereof and consequent continuous funding and progress of this field.

The last speaker will provide a non European view on the patent system and its relation with scientific research. He will discuss the impact of Patents on society and the chain effects on industry, universities, spin-offs, careers.e.g. university can gain input into industry and receive funds to sponsor research. Spin-offs are an opportunity to patent in ways that established pharma might be too cautious to do.

### **Organiser**

Valentina Predazzi

Società Italiana Brevetti SpA, Italy

### **Moderator**

Claudio Germinario

Società Italiana Brevetti S.p.A. , Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Accelerating Innovation: Lessons from experienced entrepreneurs

6 July, h. 10.30 - 11.45, Dublino

**Alberto Sangiovanni-Vincentelli**

Edgar L. and Harold H. Buttner Chair of Electrical Engineering and Computer Sciences at the University of California at Berkeley, USA

**Riccardo Lo Cascio**

University of California-Davis, USA

**Daniel Hulme**

CEO, NPCComplete Ltd, United Kingdom

**Antonello Forgione**

AIMS Academy, Italy

This session will highlight the most effective ways of accelerating innovation based on the experience of successful entrepreneurs who have been through the process as well as prospective entrepreneurs (Kauffman Post Doctoral and Global Fellows, selected through a very competitive process) currently going through the process. The objective is to have those who have actually been through the process describe what worked well and what did not in terms of commercializing technology and building successful high growth companies. This will include a discussion of the role of universities, policy makers and business in accelerating innovation as well as the issue of IP.

### **Organiser**

Karen Wilson

Ewing Marion Kauffman Foundation, USA

### **Moderator**

Bo Fishback

Vice President, Entrepreneurship, Ewing Marion Kauffman Foundation, USA

<http://www.esof2010.org/schedule/1/4a>



## **B** Identifying Ethical Issues of Emerging ICT Applications

6 July, h. 10.30 - 11.45, Copenhagen

**Bernd Stahl**

De Montfort University, United Kingdom

**Michael Rader**

ITAS, Germany

**Veikko Ikonen**

VTT Digital Life, Finland

**Ivan Szekely**

Eotvos Karoly Policy Institute, Hungary

**Philippe Goujon**

University of Namur, Belgium

This proposal centres on the Ethical Issues of Emerging ICT Applications (ETICA) project. ETICA is an EU funded project with a mandate to investigate and identify future and emerging technologies that are likely to materialize in the next 10 to 15 years including their application areas. The investigation also involves the identification of arising ethical issues of the emerging technologies. More often than not, ethical issues in technologies are usually looked at once a technology has been fully developed rather than as a technology or technologies are being developed. ETICA is proposing a more novel and proactive approach where ethical issues should be identified at an earlier stage of technology development in order to avoid potential problems that may evidence themselves after a technology has already been developed. Such an approach is more valuable in the sense that any ethical pitfalls can be reduced and possibly eliminated at an earlier stage. In addition, technology developers can be forced to be more sensitive to end-user needs by putting in place technology design standards that ensure more stringent checks that look out for potential ethical issues at every stage of development. Such a stance will ensure that as technologies are developed so too are potential arising ethical issues tackled in the process to avoid unwanted pitfalls.

### **Organiser**

Kutoma Jaqueline Wakunuma

De Montfort University, United Kingdom

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: European Accelerators Models

6 July, h. 12.00 - 12.45, Roma

**Maurizio Rossi**

H-Farm, Italy

**Lars Jorgensen**

Gazelle Growth, Denmark

**Andy Goldstein**

Executive Director, LMU Entrepreneurship Center, Germany

This interactive session includes the founders or heads of various accelerators across Europe. Each of them has been selected according to the different models/approaches they have taken to provide a solid ground for discussion on various models across Europe. This session will help inform the audience about what is working and how various accelerators are approaching the acceleration of start-ups.

### **Organiser**

Katie Petersen

Ewing Marion Kauffman Foundation, USA

### **Moderator**

Stephan Gutzeit

Executive Director, Stiftung Charité Berlin, Germany

<http://www.esof2010.org/schedule/1/4a>

**B**

Showcase: Controversial spaces and disputed periods. Could simulators be developed into tools for handling complex issues?

6 July, h. 12.00 - 12.45, Atene

**Claes Erik Frölund**

Deputy CEO, BAE Systems AB Security and Resilience, Sweden

**André Joly**

OKTAL-SE, France

**Annica Ljungberg**

XLNT Communication AB, Sweden

**Graham McIntyre**

Newman&Spurr Consultancy Ltd., United Kingdom

A common use of simulators is to train operative or strategic personnel in decision-making under pressing circumstances. Successful simulators are thus built on high-quality software and can bring about realistic representations of real world physical environments and social relations. For that reason simulators can be very effective and cost efficient instruments for expanding, upholding and spreading of specific competence in fields such as air traffic controlling, logistics in harbors and shipping, crisis management, and defense industry. From this background, a potential application coming out of this interactive roundtable could be an expanding development of existing simulators and software for simulators. Starting from a cross-sector and cross-methodology approach, it may very well be the case that existing systems for simulation could be developed for the use in operative training in new areas and business fields such as environmental and energy technology, energy security, sustainable forestry and farming, nuclear waste management et cetera. Another and even more promising application development would be to rethink the most typical usage of simulation and simulators. Instead of using them for the training in real world operative actions, simulators could be developed into heuristic and analytical tools or even into instruments for the visualizing of complex issues. Whether it is private companies, public authorities, researchers or university students that try to get to grips with time-space complexities in measures around energy security, climate change, nuclear waste management or the like, smart simulators could contribute mind-opening support.

**Organiser**

Urban Strandberg

University of Gothenburg, Sweden

<http://www.esof2010.org/schedule/1/4a>



## Showcase: simulating complex socio-economic systems - business and policy applications

6 July, h. 12.00 - 12.45, Dublino

**Pietro Terna**

Università di Torino, Italy

**Ugo Merlone**

Università di Torino, Italy

The investigation of complex systems dynamics with the purpose of improving business organization and public policies design calls for an improvement of traditional mathematical models by the introduction of agent-based simulation.

In this way it is possible to integrate behavioural evaluations, actual data, rule influence and general knowledge of the economic and social environment in order to forecast dynamic changes, mainly in a “what-if” perspective. Results obtained with those models in the business and policy fields are along three directions: production optimization; firms interaction and cooperation in production chains and industrial systems; theoretical analysis of “would be” situations to increase the knowledge about the effects of local governments policies.

The presentation of applications of agent-based simulation to issues concerning public policies, production optimization and firms organization aims at showing the power of such a new scientific tool and at allowing to comprehend how individual behaviour can lead to unexpected consequences and how relevant systemic improvements can be obtained by the adoption of agent-based techniques. After a short introduction of the tool to the audience, the agent-based simulations that will be presented will concern: Systemic risk and interbank payments; Social changes in a local policy perspective; A model of work group interaction to understand the effects of organizational justice.

### Organiser

Matteo Morini

Università di Torino, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: From the clinic to the home - how technologies can help frail older people in the community

6 July, h. 12.00 - 12.45, Copenhagen

**Keelin Murphy**

TRIL Centre, Ireland

**Ottavio Davini**

San Giovanni Battista Hospital Torino , Italy

**Vittoria Tibaldi**

San Giovanni Battista Hospital Torino , Italy

**THE PIEDMONT RADHOME PROJECT** In 2008 the Piedmont Regional Agency for Health Services funded a research on a public domiciliary radiography programme for frail elderly and immobilized patients. Preliminary experiences indicated that the coupling of simple system, light-weight X-ray equipment with an advanced Direct Radiology, proves effective for domiciliary radiographic service. A multidisciplinary team was involved in the development of the project. The aim was to evaluate the benefits and the cost-effectiveness of radiological examinations at home.

A randomized controlled study was conducted at the Geriatric Hospital at Home Service of San Giovanni Battista Hospital of Torino, a big University teaching and tertiary-care hospital.

Patients were randomly assigned to perform diagnostic imaging at home or in hospital. At home, the radiological examinations were carried out using a portable high frequency X-ray tube and a mobile radiological station with visualization and real-time processing of acquired images. All patients were examined using a standardized protocol. The results of the research will be highlighted during the session.

**TRIL (Technology Research for Independent Living) Centre technology display**

TRIL Centre will demonstrate the development of its technologies, designed with and for older people, to enable them to live independently in their homes for as long as possible.

TRIL is exploring the physical, cognitive and social consequences of ageing and developing technology solutions to address them.

TRIL is a team of multidisciplinary researchers consisting of clinicians, ethnographers, designers, technologists and scientists.

TRIL is currently transitioning its research from the lab to the home, with in-home trials of technology prototypes. TRIL will demonstrate the development of these technologies from a clinic or a lab setting to the home.

### **Organiser**

Marco Grosso  
Keelin Murphy

San Giovanni Battista Hospital Torino , Italy

TRIL Centre, Ireland

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## **B** European Research&Business Speed Dating

6 July, h. 12.00 - 12.45, Other

The European Research & Business Speed Dating is a brokerage event aiming at facilitating the cooperation opportunities between research & business through planned bilateral meetings. The one to one meetings are primarily aiming at encouraging the building of consortia to participate in projects co-financed by the 7 Framework Programme (FP7), the main financial tool to support research and development activities in Europe. The brokerage event is a unique opportunity for companies, research centres and universities to meet potential partners for research projects, cooperation agreements and technology transfer.

Pre-registration required, please see details in the relevant page.

### **Organiser**

Torino Chamber of Commerce

Union of Chambers of Commerce of Piedmont In the framework of the Enterprise Europe Network

<http://www.esof2010.org/schedule/1/4a>



## **B** Enhancing value extraction from existing patent portfolios

6 July, h. 14.15 - 15.30, Dublino

**Danielle Lewensohn**

Unit for Bioentrepreneurship, Karolinska Institutet, Sweden

**Jan de Visser**

Senior Director, Philips Intellectual Property&Standards, The Netherlands

**Ben Goodger**

Rouse, United Kingdom

**Stephen Potter**

Former Chairman of the R&D Society, Switzerland

This session will provide you with an overview of the latest trends in intellectual property (IP) management, the key players of the IP market and offer some exclusive insights into real life cases. We will also touch upon the range of strategies universities, corporations and intermediaries (also known as patent brokers) employ to manage and enhance the value extraction of existing IP rights. The ability to award inventors a patent, copyright or trademark to compensate for their contribution to society is central in a modern innovation infrastructure.

The utilization of intellectual property (IP) such as patents, trade-marks and know-how extends beyond the fundamental notion of a legal contract between the inventor and the state. In many sectors, the role of IP is developing to support the business strategy and investment decisions. As a result, markets for buying and selling intellectual property rights are emerging. Universities and corporations are forced to be more particular about what research results are turned into IP and how that IP is “turned-over” for the benefit of their start-ups, licensing and business deals.

### **Organiser**

Danielle Lewensohn

Unit for Bioentrepreneurship, Karolinska Institutet, Sweden

### **Moderator**

Danielle Lewensohn

Unit for Bioentrepreneurship, Karolinska Institutet, Sweden

<http://www.esof2010.org/schedule/1/4a>



## **B** European Research&Business Speed Dating

6 July, h. 14.15 - 17.00, Other

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## **B** Education for the next generation of Innovators - Tyndall/Intel/IRCSET Collaboration

6 July, h. 15.45 - 17.00, Roma

**Jim Greer**

Head of Graduate Studies, Tyndall National Institute, Ireland

**Derek O'Brien**

Irish Research Council, Ireland

**Padraig O'Murchu**

Intel Ireland, Ireland

Irish Government strategy for Science, Technology and Innovation aims to develop Ireland as a knowledge based economy renowned for excellence in research. Graduate education is a critical component of this strategy. University-industry collaborations, such as the Tyndall-Intel partnership, provide students with opportunities to undertake research in leading edge technology development, gain relevant transferable skills and satisfy industry demand for postgraduates with key skills and knowledge aligned to current and future technology needs.

The Irish Research Council for Science, Engineering and Technology's (IRCSET) Enterprise Partnership Scheme facilitates industry academia collaboration through awarding industry co-funded postgraduate and postdoctoral scholarships to the most promising and talented researchers. This proposal seeks to highlight the model adopted jointly by Tyndall, INTEL and IRCSET for best practice in PhD education.

Students hosted by Tyndall have access to top class facilities and work alongside internationally renowned senior researchers. They are supervised by Tyndall researchers and academics from University College Cork science and engineering departments, mentored by an INTEL expert and participate at the annual Intel European Research conference. The combinations of the nature of the research topics; access to both industry and academic experts and world class research facilities help students to produce original, highest quality research.

### **Organiser**

Orla Slattery

Tyndall National Institute, Ireland

### **Moderator**

Jim Greer

Head of Graduate Studies, Tyndall National Institute, Ireland

<http://www.esof2010.org/schedule/1/4a>



## **B** National Innovation Policies: A Cross-Country Perspective

6 July, h. 15.45 - 17.00, Dublino

### **Mario Calderini**

Principal advisor to the Ministry of Piedmont Region for Research and Innovation,  
Italy

### **Burton Lee**

Stanford University & Member National Innovation Task Force Office of the Prime  
Minister, Ireland

### **Andy Wyckoff**

Directorate for Science, Technology and Industry, OECD, France

This panel will discuss innovation policies in various countries (Europe as well as other leading examples). The goal of the panel would be to describe the evolution of policy based on the fast changing innovation environment and highlight various policy approaches taken in countries which have done well in innovation indices and scoreboards.

### **Organiser**

Karen Wilson

Ewing Marion Kauffman Foundation, USA

### **Moderator**

Bo Fishback

Vice President, Entrepreneurship, Ewing Marion Kauffman Foundation, USA

<http://www.esof2010.org/schedule/1/4a>



## **B** Science to Business Keynote session: Building the Entrepreneurial Economy

6 July, h. 17.15 - 18.00, Londra

**Alberto  
Vincentelli**

**Sangiovanni-**

Edgar L. and Harold H. Buttner Chair of Electrical Engineering and Computer Sciences at the University of California at Berkeley, USA

**Carl Schramm**

President & CEO, Ewing Marion Kauffman Foundation, USA

In this keynote discussion, Carl Schramm, President & CEO of the Ewing Marion Kauffman Foundation, would provide a framework for how entrepreneurial economies and knowledge triangles develop. He would engage in an interactive discussion with experience entrepreneur, Alberto Sangiovanni-Vincentelli about the key players in the entrepreneurial ecosystem and success models for accelerating innovation.

**Organiser**

Karen Wilson

Ewing Marion Kauffman Foundation, USA

<http://www.esof2010.org/schedule/1/4a>



**B** Showcase: best practice model of academia and industry working towards a common goal

6 July, h. 17.15 - 18.00, Roma

**Rathnait Long**

Tyndall National Institute, Ireland

**Roger Nagle**

Intel Ireland, Ireland

**Padraig O'Murchu**

Intel Ireland, Ireland

**Jim Greer**

Tyndall National Institute, Ireland

Tyndall and Intel propose a panel discussion and showcase of leading world technologies directly resulting from the industry/academic relationship. Staff and students will present different collaboration forms under the Tyndall/Intel model. They will share their views and best practices for a successful industry/academia relationship. Q&A session will enable attendees to go into further details.

Tyndall and Intel have been collaborating together on ICT R&D and education for many years. By pooling their resources technological barriers have been overcome, faster and more effectively. A key advantage to these collaborations is ensuring that research and education programmes are market relevant. Case studies around the collaboration forms will be presented.

**Organiser**

Aoife O'Donoghue

Tyndall National Institute, Ireland

<http://www.esof2010.org/schedule/1/4a>

**B**

## Showcase: Monitoring for art safeguard and tourism management in Piemonte - the harmonisation of technologies, policies and actors

6 July, h. 17.15 - 18.00, Atene

**Sara Levi Sacerdotti**

SiTI - Higher Institute on Territorial Systems for Innovation, Italy

**Cristina Mossetti**

Soprintendenza per i Beni Storici Artistici ed Etnoantropologici del Piemonte, Italy

**Marco Parvis**

Politecnico di Torino, Italy

The panel discussion has the objective of disseminating the results of studies carried on in Politecnico di Torino on areas of touristic interest, from geographic areas to buildings, as examples of harmonization of technologies, policies and the different actors involved.

The environmental monitoring system recently installed by Politecnico di Torino researchers in the Villa della Regina, now open to public after a decennial restoration, will be the objective of an intervention. As a matter of fact, the dissemination action is essential to ensure that innovative sensors developed and tested in research projects reach the world of conservators from one side and the industry from the other one, due to the wide possibilities of applications of the devices.

Orta Lake, Susa Valley and Venaria Reale will be case studies focus on methodology of tourism management in order to develop a measure of the Regional Strategic Plan for the Tourism in the Piemonte Region, Post-Olympic Games legacy.

SiTI, Higher Institute on Territorial Systems for Innovation and Politecnico di Torino developed a methodological diagram for a visitor management plan. The visitor experience is the main topic of the diagram that is developed on the demand, destination and site management. Moreover, it crosses three main tourism policies: accessibility, hospitality and information. The goal of the diagram is to act a standard procedure of visitor management, characterized by the reproducibility in the different territorial scales and types of tourism.

Starting from the analysis of tourists' profile and from a process of participation with local actors, it defines specific guidelines for the policies design.

### Organiser

Emma Angelini

Department of Material Science and Chemical Engineering, Torino Polytechnic, Italy

Emanuela Gasca

SiTI - Higher Institute on Territorial Systems for Innovation, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** Showcase: A trip in Torino Valley

6 July, h. 17.15 - 18.00, Dublino

**Marco Cantamessa**

I3P Innovative Companies Incubator Politecnico di Torino, Italy

**Giovanni Colombo**

Istituto Superiore Mario Boella, Italy

**Pietro Gentile**

Intermedia, Italy

**Rodolfo Zich**

Torino Wireless, Italy

**Claudio Pasqua**

Gravità zero, Italy

Torino Valley is an association that aims at promoting innovation in Torino and Piemonte. Torino, the laboratory-city, is a working progress hub for innovation, technology and science. There is a growing number of start-ups and spin-offs, favoured by creativity, business and university. We want to introduce to the session participants a short business card of the Torino innovation and business framework and of the ecosystem that has been created in these years.

### **Organiser**

Vittorio Pasteris

Torino Valley, Italy

<http://www.esof2010.org/schedule/1/4a>

**B**

## Sponsored Showcase session - Research and Innovation for sustainable chemistry: the Bracco Imaging and Novamont cases

6 July, h. 17.15 - 18.00, Copenaghen

**Franco La Ferla**

IBIS Consortium for sustainable Chemistry and Isagro Ricerca Srl, Italy

**Fulvio Uggeri**

Bracco Imaging Spa, Italy

**Giulia Gregori**

Novamont Spa, Italy

IBIS is a consortium putting together business and research centres. They form the Piemonte innovation hub for sustainable chemistry. Research underway deals with sustainable coating/paint, products based on renewable sources, transformation of biomasses, reduction/re-use of wastes, optimisation of processes. Two highly significant IBIS adherents are presented.

Bracco Imaging spa produces over 2,000 tons per year of chemicals for diagnostics. Sustainability is a research line and a main strategy for the company. The processes underway represent a top technological level; nevertheless they are subject to continuous innovation.

Novamont SpA was established in 1989 under the name of Ferteca strategic research centre, within the Montedison group, with the aim of integrating chemicals and agriculture according to environmental sustainability (the company's ambitious project, "Living Chemistry for Quality of Life"). It has been able to equip itself with technology required to ensure upstream integration, something which is at the basis of the bio-refinery. The concept of a bio-refinery represents an example of a new corporate model, a project which links the company to the local region and which creates a strong base from which to launch a company in the international market.

### Organiser

Franco La Ferla

IBIS Consortium for sustainable Chemistry and Isagro Ricerca Srl, Italy

<http://www.esof2010.org/schedule/1/4a>



## **B** European Research&Business Speed Dating

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Torino Chamber of Commerce

Union of Chambers of Commerce of Piedmont In the framework of the Enterprise Europe Network

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## Showcase: You can neutralize carbon emissions - make grow microalgae!

7 July, h. 09.00 - 10.15, Copenaghen

**Victor Thut**

Colégio Dante Alighieri, Brazil

**Sandra Tonidandel**

Colégio Dante Alighieri, Brazil

The global warming problems are directly related to the increasing of greenhouse gases concentration in the atmosphere, such as the carbon dioxide. Since photosynthetic microorganisms have higher growth and photosynthetic rates than plants, they are an interesting object of study for carbon sequestration. The present work aimed to test the hypothesis that photosynthetic microorganisms grown in a closed photobioreactor for domestic usage are able to neutralize carbon emissions from a specific group of people. In vitro growth of different freshwater Cyanobacteria strains was evaluated under controlled conditions, in triplicates. Carbon sequestration was evaluated at the beginning of the stationary phase. The data were submitted to a statistic analysis of variance to check the differences between the strains. The construction of the photobioreactor is in progress. This machine is projected to neutralize carbon emission from the users by growing the microorganisms under a controlled and independent way, in other words, the user would interfere minimally on its working. The calculations of the user's carbon emission will be performed online by software through a web site, to which the equipment will be indirectly linked. At this showcase the obtained data , as well as the prototype will be presented.

**Organiser**

Victor Thut

Colégio Dante Alighieri, Brazil

<http://www.esof2010.org/schedule/1/4a>



## **B** Space from Earth Science to Exploration

7 July, h. 10.30 - 11.45, Roma

**Miguel Aguirre**

ESA, The Netherlands

**Mario Calderini**

Principal advisor to the Ministry of Piedmont Region for Research and Innovation, Italy

**Enrico Flamini**

ASI, Italy

**Vincenzo Giorgio**

Thales Alenia Space Italia SpA, Italy

**Paul Kamoun**

Thales Alenia Space France, France

Earth observation from space allows a wide-frame and long-term monitoring of large-scale phenomena, which should not be surveyed by ground-level observations only.

In the long term, this will enable a reliable assessment of the global impact of human activity and the likely future extent of climate change.

Taking measurements of Earth from space is a challenge, because the accuracy required could be hardly obtained with common technologies.

Joint efforts in technological and scientific research by industry and university can lead to innovative solutions for high-accuracy Earth observation and climate change monitoring, and can produce powerful applications responding to the needs of regional, national and European policies about climate change.

On the other side, the same scientific and technological solutions can be applied or extended to the exploration of other planets.

The interviewer shall drive the discussion on future development of remote sensing technologies and applications, both in Earth observation and in space exploration. Some initiatives shall be presented, aimed to encourage co-operation between industry and university and to grow an expert community, both at local and European level, in this field. One example is given by the cooperation of local industry and university for the creation of a Knowledge and Innovation Community (KIC) on Climate Change, responding to the call for proposals of the European Institute of Innovation and Technology (EIT).

### **Organiser**

Mariarosa Sirna

Thales Alenia Space Italia SpA, Italy

### **Moderator**

Vincenzo Giorgio

Thales Alenia Space Italia SpA, Italy

<http://www.esof2010.org/schedule/1/4a>



## Showcase: the Little, The Larger and the Best - A successful Venture Capital backed Start Up

7 July, h. 10.30 - 11.45, Copenaghen

### Giuseppe Guillot

Yoox SpA, Italy

One of the continuing problems in the startup and venture market today is the issue of exit opportunities for companies, and in particular the problem of liquidity for founders. Thus we propose to share the main principles of Venture Capital with the audience and to show the way with which VCs can back promising and innovative business ideas. To do that, we will organized an interview ruled by an important economic journalist with a successful entrepreneur, whose company has been backed by a VC.

The journalist will deepen the experience of the entrepreneur to make it easier for the spectators to understand which are the main issues one has to face in founding an high tech company. Thanks to our international network the guests which we would like to invite will be international.

### Organiser

Federico Sarti

I3P - Innovatice Companies Incubator Politecnico di Torino, Italy

### Moderator

Emil Abirascid

Journalist, Italy

<http://www.esof2010.org/schedule/1/4a>