# Moonshots of the 2020s

## How to make the most of the missions of Horizon Europe?

*This series of high-level events (by invitation) addresses the future visions of Finnish universities regarding EU Research and Innovation Policy and Horizon Europe.*

*The events will gather representatives of European institutions, public sector, industry and other stakeholders, to discuss the great global challenges of our time and their scientific solutions, together with researchers and academic leaders.*

*The events are organized by Universities Finland UNIFI, in cooperation with all Finnish universities and Finnish Regional Offices in Brussels.*

## Digital and Industry

**Time:** Wednesday 7.11.2018, 13.00-15.30 (light lunch served)
**Venue:** ASP A1E-1 European Parliament hosted by MEP Mirja Vehkaperä
**Registration:** fill the [form](#) by 30 October 2018

## Programme

**Moderator:** Senior Advisor **Richard Tuffs**, ERRIN

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| 12:30 | **Registration for access badge at Altiero Spinelli Info Point** |
| 13:00 – 13:30 | **Light Lunch** |
| 13:30 – 13:40 | **Event Opening** |
| | MEP **Mirja Vehkaperä,** European Parliament |
| 13:40 – 13:45 | **Introduction: EU R&I Missions – Role of the Universities ([presentation](#))** |
| | Vice Rector for Research **Taina Pihlajaniemi**, University of Oulu |

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| 13:45 – 14:00 | **Commission views and expectations on the missions** |
| | Director **Lucilla Sioli**, Artificial Intelligence and Digital Industry, DG CONNECT, European Commission |
| 14:00 – 14:20 | **Discussion of beyond 5G systems research with a case study 6Genesis Flagship (presentation)** |
| | Professor **Ari Pouttu**, University of Oulu |
| | **Co-evolution of human capabilities and emerging technologies: Towards strengthening human skills in the changing world (presentation)** |
| | Professor **Pentti Haddington**, University of Oulu |
| 14:20 – 14:40 | **The Future of Industry is Digital (presentation)** |
| | Professor **Martti Mäntylä**, Aalto University |
| | **Leading the Digital Transformation (presentation)** |
| | Director Adjunct Professor **Marko Turpeinen**, Helsinki Node, EIT Digital |
| 14:40 – 14:55 | **Industry viewpoint: Smart Networks research in Horizon Europe (presentation)** |
| | Head of Research Alliances Dr. **Werner Mohr**, Bell Labs CTO ISG – Standardization, NOKIA |
| 14:55 – 15:25 | **Discussion** |
| | Commentary from DG CONNECT, questions and reflections to involve all participants in co-designing the missions related to Digital and Industry. |
| 15:25 – 15:30 | **Closing of the event** |
| | Dean **Jouko Lampinen**, School of Science, Aalto University |

## Moderator

### Senior Advisor Richard Tuffs

**Richard Tuffs** is currently Senior Advisor in ERRIN after being the director of the ERRIN network from October 2010 to August 2017. ERRIN is a regional network that promotes the regional dimension of the European research and innovation agenda, European project development and management and raises the profile of its member regions and cities in Brussels.

Richard has been in involved in numerous EU projects such as science communication, Future Internet, Smart Specialisation, regional innovation, smart cities, territorial planning and eco-innovation. He has also acted as an evaluator for Horizon 2020 projects. He was the rapporteur for the European Commission expert group on the Capital of Innovation prize launched in 2013. Richard was also on the European Commission's Advisory Group for Science with and for Society and serves on many other advisory boards focusing on research and innovation. He is often invited to moderate, present and act as rapporteur at conferences on European research and innovation topics such as the annual European Week of Regions and Cities and the Week of Innovative Regions in Europe.

Richard has a degree in geography and social sciences and master's degrees in town planning, applied linguistics and business administration. His career also spans town planning, applied linguistics, language and management training, university lecturing and research and education administration.

## Speakers

### MEP Mirja Vehkaperä

**Mrs. Mirja Vehkaperä** is a Finnish politician and Member of the European Parliament (MEP) from Finland. She is a member of the Centre Party of Finland, part of the Alliance of Liberals and Democrats for Europe.

Vehkaperä graduated from the University of Oulu, Finland, with the Master's degree in Education in 2003. She was elected to the parliament of Finland in 2007 from the constituency of Oulu and was re-elected in 2011 and 2015 elections.

In June 2018, Vehkaperä took her seat in the European Parliament. She is a Vice Chair of the Committee on Development (DEVE), a member of the Delegation to the EU-Russia Parliamentary Cooperation Committee (D-RU) and a substitute member of the Committee on Foreign Affairs.

### Vice Rector for Research Taina Pihlajaniemi

University of Oulu Vice Rector for Research is, for her second term, M.D., Ph.D. **Taina Pihlajaniemi.**

In 1996–2009 Pihlajaniemi was Scientific Director of Biocenter Oulu, as well as Director of the Biocenter Oulu Graduate School. She was the Founding Director of Biocenter Finland in 2006–2007. Pihlajaniemi was Director of the Academy of Finland Centre of Excellence for Cell-Extracellular Matrix Research in 2012–2017, consisting of six research groups in the University of Oulu. She also was Director of the Academy of Finland Centres of Excellence for Collagen Research in 2000-2005 and Biocenter Oulu in 1995-1999. She was post-doctoral scientist at the University of Medicine and Dentistry - Rutgers Medical School, Piscataway, New Jersey, U.S.A., in 1982-1985. Pihlajaniemi graduated as Doctor of Medicine from the University of Oulu in 1987. She was appointed Professor of Medical Biochemistry in 1990 at University of Oulu. She has served in many national and international positions of trust such as member of the Research Council of Health at the Academy of Finland in 1998-2003, member and chair of the Board of Directors for the Center for Scientific Computing in 1998-2010, and member of the ESFRI Thematic Working Group for Biological and Medical Sciences in 2004-2011. Pihlajaniemi is also the scientific co-founder of FibroGen Inc.

### Director for Artificial Intelligence and Digital Industry, Lucilla Sioli

Ms **Lucilla Sioli** is the Director for "Artificial Intelligence and Digital Industry" within Directorate-General CONNECT at the European Commission. She is responsible for the coordination of the European digitisation of industry strategy and for policy development in the area of artificial intelligence (AI). The directorate also supports R&D&I in key digital industrial technologies including microelectronics, photonics, robotics and AI. Lucilla holds a PhD in economics from the University of Southampton (UK) and one from the Catholic University of Milan (Italy) and has been a civil servant with the European Commission since 1997.

### Professor Ari Pouttu

Professor **Ari Pouttu** has scientific and engineering experience as a researcher, project manager and research manager in various domains of ICT development. The projects under his command have resulted in waveforms and system designs for military radio communication, radar systems, embedded device networks, future wireless radio communications including cellular systems, cognitive networks and navigation applications.

He has published more than 60 conference or journal papers in the field of wireless communications and he holds two patents. He was the Director of Centre for Wireless Communications in the University of Oulu from 2006 to 2012. Currently he is heading as a professor a research group targeting dependable wireless solutions for business verticals such as energy, industry, health and automotive including solutions for 5G. He is the principal investigator of 5G test network (5GTN)

experimental research, co-PI of H2020 Sat5G project and is acting as collaborative projects leader in national 6Genesis flagship targeting 6G solutions.

## Professor Pentti Haddington

**Pentti Haddington** is professor of English at the University of Oulu. He is also director of the Eudaimonia Institute, the focus institute of human sciences in Oulu, and a principal investigator in the COACT (Complexity of (inter)action) research community in Oulu. Haddington's teams use video-based methods in linguistics and sociology to study people's everyday lives, focusing especially on how they talk and interact. Haddington's funded projects have focused on interactional multitasking, interaction in cars and multinational crisis management training. His teams adopt a future-oriented perspective: they aim to produce knowledge about the organisations of interaction which can be used to strengthen the wellbeing of individuals, families and communities in the rapidly changing world. Currently, Haddington is the leader of the *Generation Z and beyond* project (GenZ, 2018-2022), which is one of the University of Oulu's profiling projects funded by the Academy of Finland (2018-2022). GenZ's aim is to produce research-based knowledge to strengthen human skills and capabilities in response to the high-speed development of new and intelligent technologies in the 21st century.

## Professor Martti Mäntylä

Professor Dr. **Martti Mäntylä** is presently Professor of Information Technology with dual appointment to the Department of Computer Science in the School of Science and the Department of Mechanical Engineering in the School of Engineering at Aalto Univeristy. His focus area is Enterprise Systems, especially the Industrial Internet and more widely the digitalization of industry in general.

Mäntylä obtained his Dr.Sc. in computer science from the Helsinki University of Technology in 1983. In 1987, he was appointed full professor at the Department of Computer Science and Engineering at the Helsinki University of Technology (now Aalto University). From 1999 to 2008, he was the founding Director of the Helsinki Institute for Information Technology (HIIT), a joint research centre of Helsinki University of Technology and University of Helsinki. From 2009 until end of 2013 he was the Chief Strategy Officer of EIT ICT Labs, the Knowledge and Innovation Community (KIC) in information society of the European Institute for Innovation and Technology (EIT). Mäntylä was a post-doctoral visitor in Stanford University in 1983-84, a visiting scientist at IBM Research Division in 1989 and a visiting professor at Fraunhofer Institute for Computer Graphics in 1996-97. His other research interests include product models for computer-aided design and manufacturing and user-centric and data intensive methods for digital service innovation and design, especially large-scale field experiments.

## Finnish Node Director of EIT Digital, Adjunct Professor Marko Turpeinen

**Marko Turpeinen**, born 1968, has a Doctor of Technology Degree in Computer Science from Helsinki University of Technology (TKK, now Aalto University) and a Master of Science Degree in Media Arts and Sciences from Massachusetts Institute of Technology (MIT).

He is the Finnish Node Director of EIT Digital, a Knowledge an Innovation Community of the European Institute of Innovation and Technology. He is also an Adjunct Professor at Aalto University. He was previously a Professor in Media Technology at The Royal Institute of Technology (KTH) in Stockholm in 2006-2012. He has extensive industrial experience from the media industry, as between 1996 and 2005 he worked in various executive positions at Alma Media Corporation, a Finnish media company. His current academic research addresses issues in customized media content, human-centric approach to personal data, and the role of AI and algorithmic power in networked society.

## Head of Research Alliances Dr. Werner Mohr

**Werner Mohr** graduated from the University of Hannover, Germany, with the Master Degree in electrical engineering in 1981 and with the Ph.D. degree in 1987.

Dr. Werner Mohr joined Siemens AG, Mobile Network Division in Munich, Germany in 1991. He was involved in several EU funded projects and ETSI standardization groups on UMTS and systems beyond 3G. Werner Mohr coordinated several EU and Eureka Celtic funded projects on 3G (FRAMES project), LTE and IMT-Advanced radio interface (WINNER I, II and WINNER+ projects), which developed the basic concepts for future radio standards. Since April 2007 he is with Nokia Solutions and Networks (now Nokia) in Munich Germany, where he is Head of Research Alliances. In addition, he was chairperson of the NetWorld2020 European Technology Platform until December 2016. Werner Mohr was Chair of the Board of the 5G Infrastructure Association in 5G PPP of the EU Commission from its launch until December 2016. He was chair of the "Wireless World Research Forum – WWRF" from its launch in August 2001 up to December 2003. He was member of the board of ITG in VDE from 2006 to 2014. He is co-author of a book on "Third Generation Mobile Communication Systems" a book on "Radio Technologies and Concepts for IMT-Advanced" and a book "Mobile and Wireless Communications for IMT-Advanced and Beyond". In December 2016 Werner Mohr received the IEEE Communications Society Award for Public Service in the Field of Telecommunications.

# School of Science Dean Jouko Lampinen

**Jouko Lampinen**, D.Sc. (Tech.), (b. 1962), has worked as Professor of Computational Engineering at Aalto University and its predecessor Helsinki University of Technology since 1996. Lampinen has several years of experience as Head of Department at the Department of Biomedical Engineering and Computational Science and at the Department of Computer Science, which he was leading 2015–2016. Lampinen has also served as Vice Dean of the School of Science between 2014 and 2015. He has focused his research on probabilistic modelling of complex phenomena, pattern recognition and data-analysis