



IT Future of Medicine (ITFoM) – European Consortium to Build a “Virtual Patient” Model Meets in Berlin

Berlin, 7 February 2012 –FET Flagship pilot project IT Future of Medicine (ITFoM) meets in Berlin on 9-10 February 2012 with 120 partners to plan the next steps towards building the ‘virtual patient’ model.

The ITFoM initiative will hold the first full consortium meeting from 9-10 February 2012 in Berlin. Around 120 delegates from nearly 70 partner institutions comprising internationally acknowledged researchers from academia and industry from all over Europe and beyond will meet in Berlin to discuss the next steps towards building a ‘virtual patient’ model. This ‘virtual patient’ model will support clinicians and general practitioners in their decision for medical therapy for their patients. The ITFoM partners join their expertise in medicine, biology, technology development and ICT in this European initiative. Basis for the ‘virtual patient’ model are the data generated by ‘omics’ technologies giving information not only about the genetic make-up of an individual, but also on the protein and metabolite level which are used as indicators for the health status of a patient. These molecular data will be combined in the model with anatomical and physiological data and information about life style and environment from each patient. The ‘virtual patient’ model will revolutionize modern health care allowing the practitioner to choose the optimal treatment for each individual and predict future health risks.

The ITFoM consortium coordinated by Prof. Dr. Hans Lehrach from the Max Planck Institute for Molecular Genetics in Berlin will discuss a ten years research program to create the ‘virtual patient’ model and submit this proposal to the European Commission in the frame of the FET flagship program by the end of April 2012.

The ITFoM partners expect a revolutionary advancement especially for personalized medicine if the ‘virtual patient’ is used in routine medical care creating a benefit not only for each individual, but for the health care system in general. The decision for a specific medical treatment for a patient will be based on the data that are analysed by the model. The model supports the practitioner to choose the drug with the optimal effect in the patient help to drastically reduce unwanted or even harmful side-effects of drugs. The realization of the ‘virtual patient’ model will create huge challenges in the information and communication technologies because an enormous amount of clinical and individual data needs to be integrated and analysed in the medicine of the future.

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Notes to editors

FET11:

Within the EU Framework Programme for Research and Technological Development, Future and Emerging Technologies (FET) is funding frontier research based on radically new visions of what can be done and grounded in scientifically valid ideas.

FET acts as a pathfinder, open to new ideas and opportunities as they arise from within science or society; it increasingly relies on fresh synergies, cross-pollination and convergence with different scientific disciplines and with the arts and humanities. This transdisciplinary and high-risk research requires new attitudes and novel organisational models in research and education as the multidisciplinary creative process that is at the heart of future and emerging technologies is a constant challenge to conventional academic boundaries.

FET aims to go beyond the conventional boundaries of Information and Communication Technology (ICT) and is led by the European Commission, whom has set out to coordinate a Europe-wide research effort towards visionary technological targets in the form of the FET Flagship Initiatives.

FET Flagships are large-scale, science-driven and mission oriented initiatives that aim to achieve a visionary technological goal. They are:

- Proposed to be visionary research initiatives building on areas of established European excellence and oriented towards a unifying goal via a multidisciplinary approach nucleated from ICT future and emerging technologies;
- To generate waves of technological innovation and economic exploitation, ideally in a variety of areas and sectors, and would carry an important societal impact;
- Envisioned to run for at least 10 years, on a budget in the range of 100 million Euros per year and per initiative;
- Of such magnitude that they can only be realised through a federated effort of the different EC programmes, along with Member States, funding agencies, and where appropriate, global partners and industry.

The six FET Flagship Pilot Actions to be launched are:

- FuturICT - The FuturICT Knowledge Accelerator and Crisis-Relief System: Unleashing the Power of Information for a Sustainable Future.
- Graphene - Graphene Science and technology for ICT and beyond.
- Guardian Angels - Guardian Angels for a Smarter Planet.
- HBP - The Human Brain Project.
- ITFoM - IT Future of Medicine: a revolution in healthcare.
- RoboCom - Robot Companions for Citizens.

The initiatives are coordinated between national and EU programmes and present global dimensions to foster European leadership and excellence in frontier research. To prepare the launch of the FET Flagships, the 6 Pilot Actions are funded for a 12-month period starting in May 2011. In the second half of 2012 two of the Pilots will be selected and launched as full FET Flagship Initiatives in 2013.

Web: <http://www.fet11.eu/>

ICT & FP7:

Information and Communication Technologies (ICT) are critical to improve the competitiveness of European industry and to meet the demands of its society and economy.

ICTs have a catalytic impact in three key areas:

- Productivity and innovation, by facilitating creativity and management;
- Modernisation of public services, such as health, education and transport;
- Advances in science and technology, by supporting cooperation and access to information.

The objective of ICT research under the EU's Seventh Framework Programme (FP7), the EU's chief tool for research funding between 2007-2013, is to improve the competitiveness of European industry – as well as to enable Europe to master and shape the future developments of these technologies so that the demands of its society and economy are met.

The EU Member States have earmarked a total of 9.1 billion Euros for funding ICT over the duration of FP7; making it the largest research theme in the Cooperation programme, which is itself the largest specific programme of FP7 (with 64% of the total budget).

FP7 research activities will strengthen Europe's scientific and technology base and ensure its global leadership in ICT, help drive and stimulate product, service and process innovation and creativity through ICT use and ensure that ICT progress is rapidly transformed into benefits for Europe's citizens, businesses, industry and governments.

Web: http://cordis.europa.eu/fp7/home_en.html

Max Planck Society:

The Max Planck Society is Germany's most successful research organisation. Since its establishment in 1948, no fewer than 17 Nobel laureates have emerged from the ranks of its scientists, putting it on a par with the best and most prestigious research institutions worldwide. The more than 13,000 publications each year in internationally renowned scientific journals are proof of the outstanding research work conducted at Max Planck Institutes – and many of those articles are among the most-cited publications in the relevant field.

The primary goal of the Max Planck Society is to promote research at its own institutes. It is not a government institution although it is funded to a large extent by the federal and state governments. The currently 80 Max Planck Institutes conduct basic research in the service of the general public in the natural sciences, life sciences, social sciences, and the humanities. Max Planck Institutes focus on research fields that are particularly innovative, or that are especially demanding in terms of funding or time requirements. And their research spectrum is continually evolving: new institutes are established to find answers to seminal, forward-looking scientific questions, while others are closed when, for example, their research field has been widely established at universities. This continuous renewal preserves the scope the Max Planck Society needs to react quickly to pioneering scientific developments.

Max Planck Society

Web: <http://www.mpg.de/en>

Max Planck Institute for Molecular Genetics:

Lead partner of the ITFoM, the Max Planck Institute for Molecular Genetics is dedicated to decoding the DNA of human beings and other organisms. The Institute's scientists study the function of genes and their role during development, from the fertilised egg to the embryo and on to the mature organism. They are particularly interested in genes that can trigger diseases when they malfunction. For a quick and precise analysis of the genetic material, the scientists rely on state-of-the-art sequencing devices, which can decode the entire genetic material of a human being within a few days. Special computer programs designed at the Institute help them to analyse and interpret the resulting data.

Max Planck Institute for Molecular Genetics

Web: <http://www.molgen.mpg.de/>

ITFoM Partners:

Full Partner Organizations:

- Max Planck Institute for Molecular Genetics
- Medical University of Graz
- University College London
- Vereniging voor Christelijk Hoger Onderwijs Wetenschappelijk Onderzoek en Patientenzorg
- University of Manchester
- European Molecular Biology Laboratory
- Wellcome Trust Sanger Institute
- Kungliga Tekniska högskolan
- Imperial College London
- Maastricht University
- Consorzio Interuniversitario Risonanze Magnetiche di Metalloproteine Paramagnetiche (CIRMMP)
- International Prevention Research Institute
- Uppsala University
- University of Luxembourg / Luxembourg Centre for Systems Biomedicine
- University of Leicester
- ISC Intelligence in Science
- University of Auckland
- Universite de Geneve
- CENTRO NACIONAL DE ANÁLISIS GENÓMICO
- Siemens Aktiengesellschaft Oesterreich
- Alacris Theranostics GmbH
- Charite Universitätsmedizin Berlin
- Illumina
- Commissariat a l'energie atomique et aux energies alternatives

Associate Partner Organizations:

- Eidgenössische Technische Hochschule Zürich
- Ontario Institute for Cancer Research
- International Foundation for Computer Assisted Radiology and Surgery
- German Cancer Research Center
- The Microsoft Research – University of Trento Centre for Computational and Systems Biology
- IBM Research
- Roche Diagnostics
- Agilent Technology

- Life Technologies
- Bruker Daltonik
- AB SCIEX
- Intel GmbH
- Oxford Nanopore Technologies
- Bayer Healthcare
- Janssen Pharmaceutica
- Institute for the Digital Economy
- Harvard Medical School
- Dahlem Centre for Genome Research and Medical Systems Biology
- Tel Aviv University
- Xerox Research Centre Europe
- Oracle Corporation
- University of Genoa (IT)
- University of Tartu (EE)
- HealthSolve (UK)
- Institut Pasteur (FR)
- Max Planck Institute for Molecular Plant Physiology (DE)
- Vienna University of Technology (AT)
- VSB Technical University of Ostrava (CZ)
- Westfälische Wilhelms-Universität Münster (DE)
- Metanomics Health (DE)
- CertiCon a.s. (CZ)
- Dublin University (IR)
- Aalto University (FI)
- Athens University of Economics and Business (GR)
- SIVECO Romania (RO)
- Universität Klagenfurt (AT)
- University of Strathclyde (UK)
- UCD Systems Biology Ireland (IR)
- University of Copenhagen (DK)
- University of Edinburgh (UK)