

VPH Institute: the European think-tank on future health technology

Preamble

The Physiome, Systems Biology, the Virtual Physiological Human, Personal Health Systems, Biomedical Informatics, Life Science e-Infrastructures, Systems Pharmacology. All of these domains share one common issue: the need for integration. To implement biomedical research outputs into clinical practice and healthcare industries we need to integrate data, information, knowledge and wisdom. We need to integrate data of the same patient stored in different hospitals in different member states or in clinical research databases; we need to integrate the information related to various parts and processes of the human body into a systemic understanding of pathophysiology; we need to integrate the knowledge digitally captured into metadata, ontologies and models in order to fight the combinatory explosion of cognitive complexity integrative research is producing; and we need to integrate the wisdom produced in the research laboratories and in the clinical practice, so that it can be formalised in guidelines, standards, and protocols.

This is a huge challenge that, if met, will have a tremendous impact on the life of our citizens, and on the European and international economy. The vision of a “digital me” that contains all my healthcare information, safely managed for access from the various biomedical professionals with my approval, communicated with all my wearable and implanted technology to constantly monitor my health status and informing me, my peers, or my healthcare providers of alarming events, supporting the collaboration of various specialists around my complex systemic diseases, and used with all my data to predict the future development of my health in order to facilitate disease prevention and a fully self-aware lifestyle, is a powerful vision. But the challenges are huge.

For Europe to stand a chance in facing this challenge we need to join forces.

Proposal

We propose the creation of a European Virtual Physiological Human (VPH) Institute for Biomedical Integrative Research, incorporated as a non-profit, non-governmental international organisation according to Belgium law whose members are all the organisations that represent academic, governmental, regulatory, industrial and societal stakeholders.

The scope of this institute will be to sustain the synergistic coordination of all stakeholders’ efforts toward the common goal of developing an integrative biomedical science and technology that makes practically possible, effective, sustainable and ethical the vision described in the preamble.

This general scope will be pursued according to a detailed strategic plan periodically revised by the Institute’s governing body, which will include actions in specific contexts such as:

- Provide a strategic think-tank capable of conducting road-mapping exercises, and of developing strategic recommendations for the European Research System around the concept of integrative biomedicine.
- Support for standardisation processes to ensure interoperability of integrative technologies and the integrability of data, information, knowledge, and wisdom captured in digital format.
- Foster the collaborative development, assessment, deployment, and maintenance of tools, services, and methods for biomedical integrative research and clinical practice.
- Manage, directly or through its member organisations, shared infrastructures to support the integrative approach in research and clinical practice. This includes repositories of data and models, benchmark collections, infrastructures for the collaborative development, etc.
- Conduct, under the mandate of governmental agencies and research-funding charities, studies to assess the status, the level of adoption, and the impact of integrative methods and technologies.
- Organise actions for positive lobbying and public information around the concept of integrative medicine.
- Provide to the heterogeneous collection of stakeholders that are involved with research, technological development, and clinical practice, a single voice for the citizens of Europe, their elected representatives,

and any other institutional subject that can sustain the development, assessment and deployment of the integrative biomedicine vision.

Organisation

The VPH Institute will be an organisation whose *members* are other legally established organisations. Membership will be open and free to any organisation whose legal status and statute is compatible with the membership rules defined by the VPH Institute statute. At any point in time, any organisation can apply for membership; the *Board of Directors* will evaluate each application according to these rules, and approve all those compliant.

The assembly of supporter members will govern the institute. Each year the exiting Board of Directors will obtain from the assembly the approval of a financial plan for the next fiscal year.

The Board of Directors will provide governance to the organisation, ensure due diligence, and prepare the strategic proposals for the assembly. It will delegate the day-to-day management of the institute to an Executive Office, who will report periodically to the Board.

Constituent process

- The VPH Institute *pro tempore* Board of Directors is formed.
- A petition is launched to establish the support of the VPH research community to the creation of such institute.
- The pro tempore Board of Directors draft the statute and the by-laws of the VPH Institute; this draft is subjected to public discussion, and revised according to the comments received.
- The VPH Institute is incorporated according to the Belgian law, a bank account is opened, a financial auditor is appointed, and a subscription is opened for founding members.
- At the first General Assembly of all VPH Institute member organisations, the Pro Tempore Board of Director is replaced by the new governing bodies are appointed according to the procedures defined in the statute and by-laws. This completes the constituent process.

Time frame

The pro tempore Board expects to complete the constituent process before the end of year 2010.

***Pro Tempore* Board of Directors**

1. Marco Viceconti (Istituto Ortopedico Rizzoli – ITALY)
2. Alejandro Frangi (Universitat Pompeu Fabra – SPAIN)
3. Rodney Hose (University of Sheffield – UK)
4. Peter Kohl (University of Oxford - UK)
5. Peter Hunter (representative of VPH NoE)
6. Jos Vander Sloten (K. U. Leuven, as representative of EAMBES)
7. Karl Stroetmann (Empirica – GERMANY)
8. Peter Sloot (University of Amsterdam – NETHERLANDS)
9. Dipak Calra (University College London - UK)