Lääketieteellisen fysiikan ja tekniikan yhdistys (LFTY)
Finnish Society for Medical Physics and Medical Engineering

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1) Väitöksiä lääketieteellisen fysiikan ja tekniikan alalta
2) EAMBES allianssin tilannekatsaus

1) Väitöksiä lääketieteellisen fysiikan ja tekniikan alalta

DI **Jarno Riistaman** väitöskirja "Characterisation of Wearable and Implantable Physiological Measurement Devices" tarkastetaan julkisesti perjantaina 7.5.2010 klo 12 alkaen Tietotalon salissa TB111 (Tampereen teknillinen yliopisto). Vastaväittäjänä toimii Dr.-Ing. Dipl.-Wirt. Ing. Olaf Such (Senior Director, Philips Research Europe, Department Head, Biomedical Sensor Systems, The Netherlands). Tilaisuutta valvoo prof. Jukka Lekkala.

DI **Simo Monto**, "Dynamic correlations in ongoing neuronal oscillations in humans", Aalto-yliopisto, 29.4.2010. Vastaväittäjänä toimi professori Dante Chialvo (Northwestern University, USA) ja valvojana professori Risto Ilmoniemi. Väitöstiedote

DI **Ville Renvall**, " Studying functional magnetic resonance imaging with artificial imaging objects", Aalto-yliopisto, 24.3.2010. Vastaväittäjänä toimi professori Bruce R. Rosen (Athinoula A. Martinos Center for Biomedical Imaging and Department of Radiology, Massachusetts General Hospital, Harvard Medical School, USA) ja valvojana professori Risto Ilmoniemi. Väitöstiedote

DI **Germán Gómez-Herrero**, "Brain connectivity analysis with EEG", Tampereen teknillinen yliopisto, 19.03.2010. Vastaväittäjänä toimi professori Aapo Hyvärinen (Helsingin yliopisto). Tilaisuutta valvoi professori Karen Egiazarian TTY:n signaalinkäsittelyn laitokselta.Väitöstiedote

DI **Linda Henriksson**, "Imaging studies on the functional organization and plasticity of human visual cortex", Aalto-yliopisto, 19.2.2010. Vastaväittäjänä toimi professori Martin I. Sereno (School of Psychology, Birkbeck College London, UK & Department of Cognitive Science, UCSD, USA) ja valvojana professori Risto Ilmoniemi. Väitöstiedote

DI **Ville-Petteri Mäkinen**, "Computational analysis of the metabolic phenotypes in type 1 diabetes and their associations with mortality and diabetic complications", Aalto-yliopisto, 5.2.2010. Vastaväittäjänä toimi professori Kumar Sharma (University of California, San Diego, USA) ja valvojana professori Kimmo Kaski. Väitöstiedote

M.Sc. **Xiaofeng Dai,** "Data Fusion Methods and an Application on Exploration of Gene Regulatory Mechanisms", Tampereen teknillinen yliopisto, 12.1.2010. Vastaväittäjänä toimi professori **José Manuel Fonseca** (Universidade Nova de Lisboa). Tilaisuutta valvoi professori **Olli Yli-Harja** TTY:n signaalinkäsittelyn laitokselta. Väitöstiedote

DI **Antti Lehmussola, "**Image Processing for Systems Biology: Validation and Performance Evaluation through Simulation", Tampereen teknillinen yliopisto, 10.12.2009. Vastaväittäjä toimi tohtori Carolina Wählby (Broad Institute of Harvard and MIT). Tilaisuutta valvoi professori Olli Yli-Harja TTY:n signaalinkäsittelyn laitokselta. Väitöstiedote

2) EAMBES allianssin tilannekatsaus

European Alliance for Medical and Biological Engineering & Science (EAMBES) on lähettänyt kirjeen, jossa kuvaillaan allianssin tilannetta ja aktiviteetteja. LFTY on ollut aktiivisesti mukana EAMBES:n toiminnassa, tällä hetkellä EAMBES:n "councilin" jäseninä ovat prof. Jari Hyttinen sekä prof. Timo Jämsä. **(EAMBES:n kirje seuraavalta sivulta alkaen)**

European Alliance for Medical and Biological Engineering & Science: A summary of 2009 activity

Dear Member:

This letter aims to inform you on the status and the activities of the European Alliance for Medical and Biological Engineering & Science (EAMBES). In the wake of the new membership renewal campaign, and in coincidence of the formal launch of the EAMBES re-launch plan, the General Council of EAMBES felt the need to inform all its members about our alliance.

A brief history: EAMBES so far

EAMBES was born out of a need, but also out of difficulties. In our modern world, it is becoming more and more difficult for the public opinion to fully grasp the role of higher education, research and technological development, in particular with respect to the investment of taxpayer's money into the development and establishment of certain disciplines rather than others.

It is somehow a paradox that while almost all European governments declare that a) funding should steer toward more applied research, and b) healthcare provision is the biggest challenge to be faced for the next years, the attention funding agencies and university ministries have given to Biomedical Engineering has been spotty at least to say. In the USA the same conditions produced a great attention for Medical and Biological Engineering (MBE), with abundance of research grants, higher education funding, the creation of the NIBIB within NIH, etc. What is the difference? It has been suggested that in the United States bioengineers were able to speak with one voice to policy makers, decisions makers, and to the public at large.

On the contrary in Europe the MBE community presented itself as highly fragmented. In the academia of some member states the links with the parent engineering domain (mechanical, electrical, etc.) remains for a number of reasons stronger than the biomedical engineering identity. In research, MBE is fragmented in dozen of medium to small scientific societies, each focusing on a small region, or on a small sub-topic of MBE.

In this milieu a group of colleagues, started in the early 2000 the statutory process that produced in 2004 the incorporation of EAMBES.

The first years of activity for EAMBES were characterised by two contradicting signals. On one hand, the creation of EAMBES was welcomed at various institutional levels as a positive event, and for the first time ever we noticed some attention from the decision makers when we were able to express recommendations (mostly toward the European Commission). This confirmed that the fundamental assumption of EAMBES: *United we stand, Divided we fall*. But at the same time these first years showed that there was a structural reason why the European MBE community failed for some many years to express a collective identity, and why the statutory process for EAMBES was so slow and difficult.

The achievements of EAMBES so far

In spite of some organisational drawbacks (which will be discussed below)

- 2005: EAMBES position paper. "Engineering for Health: A partner in the development of a knowledge-based society for the benefit of European healthcare" is sent to the Commissioner for Research Dr. Janez Potocnik and to the Directorate Generals for Research and for Information Society and Media. Compared to a similar position paper written and submitted by a small group of bioengineering researchers during the preparation of FP6, this recommendation receives the attention of the various stakeholders, mostly because EAMBES represents 8000 researchers in MBE.
- 2005: Second Whitaker summit, March 4th. EAMBES was invited to represent Europe. presentation by Prof. Dick Slaaf gave a plenary presentation on Biomedical Engineering Education in Europe.

- 2005: EMBEC '05, Prague, November 23rd. EAMBES organized the Symposium "BME Education and Accreditation in Europe".
- 2006: EAMBES position paper. "Recommendations of the European Alliance for Medical and Biological Engineering and Science for the 7th Framework Program of the European Commission" aimed to influence the scope of the Seventh Framework Program (FP7) that would start in 2007, and of all related national programs that base their structure on it. Of the three priorities recommended in this document (Virtual Physiological Human, Intelligent Medical Devices, and Quantitative Evidence-Based Medicine) the first is actively pursued in cooperation with the EuroPhysiome Initiative, and results as one of the key priorities of the FP/ ICT workprogramme. To date over €140m have been allocated for Virtual Physiological Human research projects.
- 2007: a meeting of the EAMBES Task Force is organised in London.
- 2008: EAMBES endorses MBEC 2008 congress in Antwerp.
- 2008: MBEC, Antwerp, November 24th. EAMBES organized three Education Symposia. Symposium I: "EAMBES: BME education: Designing Curricula: Research and/or profession"; Symposium II:" EAMBES: Best Practice in BME education"; Symposium III: "EAMBES: Is E-learning suitable for Biomedical Engineering?".
- 2009: EAMBES submits a recommendation to the Director of Directorate F - Health of DGRTD, for a call for proposals for a networking action entitled "Technology in Health: a European Research Roadmap". The goal is to provide a research roadmap for health technology that could provide the justification for specific call for proposals in the final part of FP7 or in FP8. After a first interlocutory meeting in Brussels with some representatives of Directorate F, we are now planning a new strategy in this respect.
- 2009: World Congress on Medical Physics and Biomedical Engineering, Munich, September 7th-12th. EAMBES organized the Symposium: "BME education: Designing Curricula; Research and/or profession orientation".
- 2009: first internal draft of "Recommendations of the European Alliance for Medical and Biological Engineering and Science for the 8th Framework Program of the European Commission" has been discussed within the Council, and presented informally to some key stakeholders with request for comments. The draft, currently being revised, recommends the following priority:
    - Recommendation #1: creation of European MBE Institute and other infrastructures.
    - Recommendation #2: creation of MBE panel at the European Research Council.
    - Recommendation #3: Dedicated priority for Biomedical technology in FP8/Health.
    - Recommendation #4: Continue the development of the VPH in FP8.
    - Recommendation #5: Dedicated priority for intelligent medical devices in FP8/NMP.

The EAMBES re-launch initiative

After some years of activity, it is now possible to make a balance of the life of our alliance. The most positive aspect of EAMBES is that we were confirmed, in a number of situations, that when our community speak with one voice, which is possible only under the EAMBES trademark, the stakeholders tend to listen. The negative is that the alliance never took off from an organisational point of view, with serious issues that culminated in the failure to collect 2009 fees and to call for the electoral round. We must recognise that under these conditions the continuation of EAMBES as an important player in the BME domain needs major changes and adjustments.

EAMBES statute designs an organisation structured and operated as a scientific society, whose operations are largely based on the voluntary effort of some of its members; unfortunately, the members elected to serve in the different bodies of the Alliance have failed in their duties during several years.

During the extraordinary General Council meeting on December 3rd, 2009 it was agreed that this lack of activity is not occasional, or related to the particular inadequacy of single council members, but it is due to a profound confusion regarding the nature of the alliance. EAMBES is not a conventional scientific society and hence is not likely to attract young, skilled, but relatively free researchers that find in the commitment to the day to day operations of a scientific society a way to enhance their own carriers and curricula, while serving their specific research community. The ones who understand the value of an organisation such as EAMBES are mostly senior academic members (e.g. professors), senior researchers, and to a lesser extend members of industrial alliances as well as some members of the EU, who fully appreciate the many situations where the possibility to speak with one voice is the only chance we stand in this growingly competitive and rapidly changing system where adjustments in the strategy to follow should be made within tight timeframes and sometimes with high frequency. However, these people are by definition extremely busy, and cannot and should not use their precious time dealing with clerical duties.

We need to recognise that EAMBES is not a scientific society, stop pretending we can operate it as if it was, and adopt an organisational model that is sustainable in the long term, given that in spite of all its limits and fallacies, in its short life EAMBES already proved vital in the support of Biomedical Engineering research in Europe both.

Under a mandate of the Members of the General Council attending the extraordinary meeting, Marco Viceconti, Jos Spaan, Maria Siebes, Nicos Maglaveras, Heikki Terio, Jos vander Sloten and Dick Slaaf wrote a document that aims to define concretely a reorganisation plan to salvage the alliance and restart it into the successful organisation we all dream of.

The General Council approved this final version of the document on January 17th, 2010; it is now considered executive in all its parts. This plan can be summarised as follow:

a) The society enters into a period of extraordinary administration; during this period all the charges and roles of current elected Offices are suspended. No elections will be carried out.

b) A pro tempore Board of Directors (BoD) is formed, with the responsibility to operate the society during this extraordinary period. It assumes the powers of the President, of the Presidents Past and Elect, and of the Secretary General. The BoD Chair acts as EAMBES spokesperson. To ensure legal operability, Dick Slaaf continues to act as Treasurer, and Nicos Maglaveras as legal representative. It is proposed that the Board of Directors is composed by:

    a. Marco Viceconti (Chair)

    b. Nicos Maglaveras

    c. Jos Vander Sloten

    d. Dick Slaaf

c) We contract a lobbying consultant firm, Rohde Public Policy, to work with the BoD on the immediate implementation of strategic lobbying actions that are deemed urgent, with the aim of:

    a. Elaborating an adequate EU policy for biomedical engineering

    b. Implementing immediate actions driven by spot opportunities or initiatives that have already been undertaken

    c. Defining a permanent lobbing program to be included in the next 2011 business plan

    d. Positioning EAMBES as the main contact point in relation to Biomedical Engineering and Medical Technology research in Europe for decision makers within the EU Commission

d) The BoD selects a part-time manager that takes full responsibility for the day-to-day operations.

e) A new web site is placed in production no later than March 2010.

f) A General Assembly is organised in Brussels in May 2010.

g) On the basis of the General Assembly outcome, a business plan for 2011 is approved, and the period of extraordinary administration ends.

The EAMBES Voluntary projects

One of the things we understood in these years is that in order to build a successful policy action it is not only necessary the collective identity that EAMBES provides, and which makes possible for the whole European MBE community to speak with one voice. We also need *champions*: colleagues that driven by personal or local condition and motivations are ready to invest a significant amount of their time and energy to pursue a policy goal that is at the same time perceived by our community as of general interest.

The many actions EAMBES managed to pursue in these years are little things compared to those that we could express as community. For this reasons the re-launch plan includes participation mechanisms that make possible for single societies, institutions, or even individual members to propose specific policy actions that are considered of general interest for our community, and that the proponents are willing to pursue as champions, on behalf of EAMBES and leveraging of the support that the alliance can provide.

In a first explorative round within the General Council this tentative list of ideas came out, that are reported here just to illustrate the variety of goals that voluntary projects can target:

- Start the fellowship program, by defining the specific membership rules and procedures, and start their application in relation to the 2011 membership campaign.
- Elaborate an action plan for EAMBES in the area of Education.
- Re-launch of the EMBEC conference as *the* conference for European Biomedical Engineering, fully endorsed by EAMBES, and its active commitment to the success of the event.
- Development, deployment and maintenance of a community web service for EAMBES, with a CMS software that makes possible to all members to contribute directly to the content. The hosting and the coordination of the content update is part of the business plan, but the development of the web site should be done as a voluntary project.
- Active lobbying for the VPH, through the VPH institute.
- Active lobbying for MBE in the DGRTD Health program.
- Active lobbying for the creation of a multidisciplinary panel cluster inside the ERC investigators awards mechanism.
- Active lobbying for the creation of a European Institute for Biomedical Imaging and Bioengineering, much like the NIBIB NIH institute in USA.
- Targeted communications actions in single member states aimed to promote the role and the visibility of MBE in Europe.
- Establish links with medical and pharmaceutical professional societies to integrate BME into their activities.
- Creation of professional quality version of the EAMBES logo and other visual material for EAMBES.

Not all these ideas might find a champion, and not all might be considered of collective interest. And, more important members should not feel themselves limited to this list. Every idea is welcome at this stage. We shall soon inform the membership of the procedure to selected voluntary project; meanwhile, if you are considering of proposing to EAMBES a voluntary project we recommend that you contact the EAMBES General Manager via email at manager@eambes.org.