

## Activities 2009-2012 involving the IFMBE Citizens Safety and Security WG.

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### Working Group-

**Chair: Luis Kun (USA) –**

**Vice Chair: Ricardo Armentano (Argentina)**

### Members:

**Ludovic BOS (Holland)**

**Bill Davenhall (USA)**

**Fumihiko KAJIYA (Japan)**

**Rajaram LAKSHMINARAYAN (USA)**

**Myoungho LEE (S. Korea)**

**Mike MCDONALD (USA)**

**Guruprasad MADHAVAN (USA)**

**Alvaro MARGOLIS Uruguay)**

**Andy MARSH (United Kingdom)**

**Robert MATHEWS (USA)**

**Jose Luis MONTEAGUDO (Spain)**

**Joachim NAGEL (Germany)**

**Mike POPOVITCH (USA)**

**Guenter RAU (Germany)**

**Pradeep RAY (Australia)**

**Laura ROA (Spain)**

**Subrata SAHA (USA)**

**Francesco SICURELLO (Italy)**

**Bryan MANNING (United Kingdom)**

**Constantinos PATTICHIS (Cyprus)**

**Gouenou COATRIEUX (France)**

Summary: This IFMBE Working Group that focuses on Citizens Safety and Security, has prioritized its activities through some major areas. These include:

1. The intersection of Medical Humanism with Science and Technology
  - a. Humanitarian aspects for BME.
  - b. Crisis and Disaster Management
    - i. Post Earthquake relief for Haiti
    - ii. Cholera Outbreaks – lack of sustainable water infrastructure
    - iii. Earthquake / Tsunami relief for Japan – Radiation disaster
2. Emphasis on transforming our healthcare systems (from diagnosing, treating and curing alone) into new ones based on wellness and prevention.
  - a. A holistic global view of healthcare using complex systems dynamics that:

- i. Incorporates data / information regarding: the environment, water, food, medications, genetics, etc.
    - ii. Through the use of information technology, e.g., Uses of medical and public health informatics –i.e., Use of Geomedicine
  - b. Incorporation the views of multi-disciplines, inter-disciplines and trans-disciplines to better understand and address different demands that our global citizens have.
    - i. Incorporating into our WG, physicians, nurses, biologists, geneticists, pharmacists, dieticians, exercise physiologists, computer science, telecommunications, knowledge management, data mining, GIS, etc. experts;
3. Incorporating Public Health into the Healthcare arena.

This WG has made in some instances through invitations, keynotes, and or organized special sessions, mini-symposia, workshops, a great number of presentations. Most of them were either on IFMBE sponsored meetings, (and or this WG sponsored) during: local / National, regional meetings, etc.

During the 2009 Flu Pandemic Dr McDonald and Dr. Kun worked with the White House and a group of individuals from Academia, Industry and Government in creating what in September 2009 was labeled: ***“Medical & Public Health Information Sharing Strategic Plan”***.

Special aspects that were added by different individuals to the aims of this WG:

- a. Interoperability Summit: Healthcare Reform or Transformation–co-sponsored by 30 professional societies including IFMBE, AIMBE, ICMCC, IEEE (9 different societies) at National Academy of Science and National Academy of Engineering, June 1-2, 2009 – Dr. Kun and Dr. Mathews @ U. of Hawaii
- b. Resilience websites for Haiti and Japan disasters – Dr. Michael McDonald
- c. GEOMEDICINE – Bill Davenhall – Healthcare Manager @ ESRI USA
- d. Genetics and Personalized Medicine – Prof. Dr. Guenter Rau @ Aachen University, Germany
- e. CyberHealth - Dr. Joseph Rosen – BME @ Dartmouth College USA
- f. Social Media in Public Health [Statistical Aspects of Face Book, Twitter and other media-sharing websites as an integral part of the health communication resources – Prof. Rajaram Lakshminarayan @ USF USA

## **Per our (IFMBE) Website**

### **Assist Japan**

The **IFMBE** WG Global Citizen Safety and Security, chaired by Prof. Luis Kun, jointly with the **National Systems Science Consortium** have proposed to open a website for various suggestions on how the biomedical and health informatics communities can assist the Japanese people to recover from the recent catastrophes.

For the actual news and updates on the situation in Japan, please see: **Japan Resilience** or **UN-SPIDER**.

Our first step will be to try to make an *inventory of the institutions and researchers affected*, as well as an *overview of the technologies needed to assist*.

We therefore invite (and urge) you to help us build this inventory and overview. Please go to the ICMCC website [<http://articles.icmcc.org/assist-japan/>] to register your comments.

## 2. Japan Resilience

For more information about Japan Resilience, please go to the **Japan Resilience** website at <http://japan.resiliencesystem.org/>

## 3. Haiti Resilience

For more information about **Haiti Resilience**, please go to **MPHISE (Medical and Public Health Information Sharing Environment)** website at <http://haiti.mphise.net/>

## 2009 Activities

1. Track chair Special Panel on “*Biomedical Engineering in Preventive Health Care & Public Health*”, Thursday, Sep 10 -12:15 - 13:30, World Congress 2009 on Medical Physics and Biomedical Engineering, Munich, Germany.
2. 9/2009 –Presentation: “*The Global Health Network Infrastructure: Challenges and Opportunities*”. Theme 12: “Public Health New opportunities for Biomedical Engineers”. World Congress 2009 on Medical Physics and Biomedical Engineering, Munich, Germany.
3. 9/2009 – Track co-chair on “*Career Development in Biomedical Engineering*”. World Congress 2009 on Medical Physics and Biomedical Engineering, Munich, Germany. Round Table Social Impact of Alternative Careers.
4. 9/2009 –Invited keynote speaker for Theme 12 “/: Mini-Symposium Beyond Drugs and Devices: The Changing Role of Medical Engineering ” - Presentation: “*Career Development in Biomedical Engineering and Public Health, New opportunities for Biomedical Engineers*”, World Congress 2009 on Medical Physics and Biomedical Engineering, Wednesday, Sep 9 - 12:15 - 13:30 Munich, Germany.
5. **Through Dr. Sebastian Graf – U. Favaloro, Argentina - Invited Closing Keynote Speaker:** “*Biomedical Engineering and Global Health Transformation: A vision of opportunities and challenges.*”- to the Annual meeting of the Argentine Biomedical Engineering Society (SAIB – Sociedad Argentina de Ingenieria Biomedica) Annual Meeting– October 15-16, 2009 – Rosario, Argentina.
6. **Invited Speaker:** “*Sustainability, Health, and International Security*”. School of Industrial Engineering, Universidad Compuense. October 26, 2009, Madrid, Spain
7. **Invited International Panelist** to the World Forum “Soria 21 Sobre Salud, Bienestar, Calidad de Vida y Desarrollo Sostenible”. Roundtable: “*Health, Innovation and Eco-Technology*”. October 26, 2009, Madrid, Spain.

8. **Invited Speaker:** “Holistic View of Interoperability”, IEEE GEOSS Workshop XXXI- Using Earth Observation for Health; a workshop of the GEO Health and the Environment Community of Practice. November 13, 2009; Washington DC.
9. **IFMBE sponsor / co-sponsor] - Invited Inaugural Keynote Speaker:** "Global Health Transformation through true Interoperability” - to the IEEE Information Technology Applied to Biomedicine (ITAB) Annual Meeting– November 5-7, 2009 Larnaca, Cyprus.
10. **Invited Guest Speaker** – Presentation: “Evolución y Transformación del sistema sanitario y de la salud pública: un gran desafío del Siglo XXI”. Universidad Favaloro, December 17, 2009, Buenos Aires, Argentina.

## 2010 Activities

- 11 **Invited Session Chair** – Session: How Can IT Help Fight Pandemics; **Track Topic:** e-Health Addressing Global Challenges Through Local Actions, e-Health Week 2010 Ministerial Conference, March 16-18, 2010 Barcelona, Spain.
- 12 **Invited Presentation:** e-Health: Wellness, Disease Prevention & Control through true Interoperability **Session Chair** – Session: How Can IT Help Fight Pandemics; **Track Topic:** e-Health Addressing Global Challenges Through Local Actions, e-Health Week 2010 Ministerial Conference, March 16-18, 2010 Barcelona, Spain.
- 13 **Organizing Technical Committee** – First AMA-IEEE Medical Technology Conference on Individualized Healthcare, 21-23 March Renaissance Mayflower Hotel, **Washington DC.**
- 14 **Invited Panelist** to the House of Representatives Homeland Security Committee- Cybersecurity Roundtable Discussion: The Path Towards Cybersecurity: Key Viewpoints on Critical Infrastructure Protection; May 25<sup>th</sup> – 4-6 PM, 1539 Longworth House.
- 15 **IFMBE sponsor / co-sponsor] International Scientific Committee** -MEDICON 2010 - 12th Mediterranean Conference on Medical and Biological Engineering and Computing, 27-30 May, 2010, Neos Marmaras, Chalkidiki, Greece.
- 16 **IFMBE sponsor / co-sponsor] Session Chair** Citizen Safety and Security IFMBE - MEDICON 2010 - 12th Mediterranean Conference on Medical and Biological Engineering and Computing, 27-30 May, 2010, Neos Marmaras, Chalkidiki, Greece.
- 17 **Invited Panelist and Presenter:** “Futuras Oportunidades Para los Ingenieros Clínicos” Congreso SEEIC, Las TIC’s en la Nueva Sanidad: El Hospital Como Fuente y Motor de Innovación”, June 17, 2010, Tenerife, Islas Canarias.
- 18 **Program Committee** ISTAS- 2010 IEEE International Symposium on Technology and Society, Social Implications of Emerging Technologies, 7-9 June 2010, University of Wollongong, New South Wales, Australia
- 19 **International Scientific Committee** - 12th IEEE International Conference on E-Health Networking, Applications and Services (IEEE Healthcom) July 1-3, 2010, Lyon, France <http://www.ieee-healthcom.org/committee.html>
- 20 **IFMBE sponsor / co-sponsor] 10/2010 – Technical Program Committee** - International ICST Conference on Wireless Mobile Communication and Healthcare - 18-20 October, 2010, Ayia Napa, Cyprus <http://www.mobile-research.ethz.ch/var/MobiHealth%202010%20CFP.pdf?article274>
- 21 **Invited Speaker:** To the NATO Staff Officer Orientation Course –“Critical Infrastructure Protection and Interoperability”, July 20, 2010, NDU, Washington, DC.

- 22 Invited Panelist and Presenter:** “The Big Picture of Science and Technology through Interoperability” - Panel: The Role of R&D, S&T – INSS Conference on “Economic Security: Neglected Dimension of National Security?”, August 25, 2010. Lincoln Hall, NDU.
- 23 Dr. Armentano CHAIR of the EMBC2010** in Buenos Aires Argentina – and of **Special Workshop during EMBC2010 in Colonia Uruguay** September 2010
- 24 Invited Co-Chair** Healthcare information Systems, Telemedicine - 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 31- September 4, 2010, Buenos Aires, Argentina. <http://embc2010.embs.org/technical-program.html>
- 25 [IFMBE sponsor / co-sponsor] –Chair Armentano, Kun, Invited Inaugural Keynote Speaker:** “*Merging Medical Humanism and Technology: A Holistic view of Humanity’s Needs*” - 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, September 1, 2010, Buenos Aires, Argentina,. <http://embc2010.embs.org/invited-speakers.html>
- 26 [IFMBE sponsor / co-sponsor] –Chair Armentano, Kun Invited Panelist and Presenter:** Workshop – “*Vision 2010: Innovation + Transformation = Affordable Health for All,*” 32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, September 4, 2010, Regency Hotel Colonia, Uruguay. <http://embc2010.embs.org/technical-program.html>
- 27 Invited Keynote Speaker:** “*Information Sharing*”. SOCSOUTH Combating Terrorism Fellowship Program. “Information Sharing: Synchronizing Cooperative Regional Solutions to Combat Illicit Transnational Activities”. 20-24 September, 2010; Miami Florida.
- 28 [IFMBE sponsor / co-sponsor]** 10<sup>th</sup> International Conference on Information Technology and Applications in Biomedicine. **Special Session Chair Session 1:** “Bridging Public Health Informatics with Personal Health Records: Opportunities for Wellness and Disease Prevention”. Corfu, Greece, November 3-5, 2010  
[http://medlab.cs.uoi.gr/itab2010/index.php?option=com\\_content&view=article&id=222&Itemid=405](http://medlab.cs.uoi.gr/itab2010/index.php?option=com_content&view=article&id=222&Itemid=405) Session1
- 29 Special Session Chair:** Session 2 10<sup>th</sup> International Conference on Information Technology and Applications in Biomedicine. “Bridging Public Health Informatics with Personal Health Records: Opportunities for Wellness and Disease Prevention”. Corfu, Greece, November 3-5, 2010 [http://medlab.cs.uoi.gr/itab2010/index.php?option=com\\_content&view=article&id=222&Itemid=405](http://medlab.cs.uoi.gr/itab2010/index.php?option=com_content&view=article&id=222&Itemid=405)
- Paper 1 – Kun “Bridging Public Health Informatics with Personal Health Records: Opportunities for Wellness and Disease Prevention”. [http://medlab.cs.uoi.gr/itab2010/index.php?option=com\\_content&view=article&id=222&Itemid=405](http://medlab.cs.uoi.gr/itab2010/index.php?option=com_content&view=article&id=222&Itemid=405)
  - Paper 2- Davenhall on Geomedicine
  - Paper 3 – Kun with Rau, Germany, on Genomics and Personalized Medicine,
  - Paper 4- Armentano on Cardiology
  - Paper 5 – Kun with Rosen, Dartmouth, US, on Cyber Health
- 30 Invited Speaker:** National Security through Interoperability Transformation, Office of Science and Technology Policy – Executive Office of the President, Washington DC, 11/17/10

## 2011 Activities

- 31 Invited Speaker:** Invited by the Office of the Assistant to the Secretary of Defense for Chemical and Biological Defense and the Chief Scientist and Director Intl Programs for OASD (NCB/CB) to present to a Delegation of Australian, Canadian, UK and US Scientists. Topic: “*A Holistic View of Surveillance through the lens of Interoperability, Integration, and Knowledge Management*” CBR MOU ITF-55 - Kick off Meeting – Washington, DC – **February 2011**

- 32 Invited “Exercise Observer/VIP” to the DHS / FEMA National Level Exercise 2011 (NLE 2011) in Washington DC, May16-19
- 33 White House / OSTP Invited participant to the National Security Council (NSC) Biosurveillance Meeting organized at NDU by CWMD. Topic: A Holistic View of Biosurveillance (June.11)
- 34 Invited Subject Matter Expert (SMU) for the 2<sup>nd</sup> Worldwide Cybersecurity Summit in London (June.11) as Chief Editor – for “Collective Action to Improve Global Internet Health I and II”. Spokesperson – for the Chain Supply Management Group.
- 35 Invited to the US Congress as Guest of the East West Institute (EWI) to the Cybersecurity Hearing on the results from the London Cybersecurity Meeting – Science and Technology Committee, July 7<sup>th</sup>, 11
- 36 **Invited Moderator:** “New Challenges and Framework for Regional Security...new Alternatives for Protection and Defense”, Security Regional Conference, Santiago Chile, 19-22, July 2011
- 37 **Invited Speaker / Panelist** - Presentation: *Security and National Defense through the Protection of Critical Infrastructures*, CHDS PANEL- Session: “New Horizons for the Security and Defense of the Americas. Beyond the non-traditional threats”. Security Regional Conference, Santiago Chile, July 21, 2011
- 38 **Invited Lecture:** “*Emerging Themes for the Security and Defense of the Hemisphere: Cybersecurity, Disasters and Protection of Natural Resources*” – CHDS Alumni Association, Sheraton Hotel, Asuncion, Paraguay July 26, 2011
- 39 **Invited speaker** to the Paraguayan Parliament Defense Commission – Topic: Cybersecurity, Disasters and Protection of Natural Resources. Asuncion, Paraguay July 26, 2011
- 40 **Invited Speaker:** “The Interdependencies and the Security of Critical Infrastructures a Challenge to the Regional Integration Organizations”, Universidad Catolica, Montevideo, Uruguay, July 28, 2011  
<http://www.ucu.edu.uy/Menu/AgendadeActividades/tabid/79/Default.aspx?Anio=2011&Mes=7&Modulo=569&Evento=2714>
- 41 **Invited speaker** to the Uruguayan Senate Defense Commission – Topic: Cybersecurity, Disasters and Protection of Natural Resources. Montevideo, Uruguay, July 29, 2011
- 42 **Dr. Armentano Chaired** - Invited Speaker: “The Global Village and Public Health: One Planet...Two Worlds”, Hospital Britanico, Montevideo, Uruguay, Distinguished Visitor Program - (cosponsored by the IEEE-EMBS & CS, Universidad Catolica) August 1, 2011  
[https://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/7633](https://meetings.vtools.ieee.org/meeting_view/list_meeting/7633)
- 43 Article in the Newspaper- El Pais, Montevideo Uruguay August 8 2011 - “*Cuando hablo de Seguridad no me refiero a la Policia*” <http://www.elpais.com.uy/110808/lault-585113/mirador/-Cuando-hablo-de-Seguridad-no-me-refiero-a-la-Policia/>
- 44 **Invited Speaker:** “*From Astronauts and War-fighters, to Homecare and Disease Prevention: The Evolution of Human Threats in the Healthcare Cyberspace*”-The Evolution of Human Threats in Cyber. A Transforming National Security Series Event, 155 Marshall Hall, National Defense University, Washington DC. August 15, 2011  
[http://www.google.com/search?q=luis+kun,+ibm&hl=en&rls=com.microsoft:\\*&prmd=ivnsbo&ei=Z9j8TqPZEK-00AHu4cWrBA&start=50&sa=N](http://www.google.com/search?q=luis+kun,+ibm&hl=en&rls=com.microsoft:*&prmd=ivnsbo&ei=Z9j8TqPZEK-00AHu4cWrBA&start=50&sa=N)
- 45 Chair special session for the Global Citizen Safety and Security WG during the 5<sup>th</sup> European IFMBE Conference in Budapest, Hungary (September.11)
- 46 **Invited Short Tutorial:** “The Use of Mobile Technologies and Health Informatics for Disaster and Crisis Management”, 2<sup>nd</sup> International ICST Conference on Wireless Mobile

Communication and Healthcare - MobiHealth 2011, Kos Island, Greece, October 7, 2011  
<http://www.mobihealth.name/tutorial.shtml>

- 47 Invited Speaker:** “One Planet ...Two Worlds: A Holistic View to The Global Village & Our Islands of Excellence”, Special Session for Redefining Interoperability and Standardization, DHS Inter Agency Board (IAB) Meeting, Sheraton Pentagon, Arlington Virginia November 2011
- 48 Dr. Armentano chair –Kun invited Speaker:** La cultura de la innovación TIC basadas en la tecnología que fomenta la integración, el espíritu empresarial y el pensamiento creativo. Taller: Escenarios de Interfaz Universidad-Empresa en Iberoamérica Ejes movilizados de impacto económico social, coste-eficacia y valor agregado. Universidad Católica, December 12, 2011
- 49 Invited Speaker:** “One Planet...Two Worlds: Building Critical Infrastructure for the Global Village”. Universidad Favaloro, Buenos Aires, Argentina, December 14, 2011.

## 2012 Activities

- 50 February 22** – AIMBE annual Meeting – Special Session Panelist on **Bioengineering for Biodefense** with Frances Ligler, D.Phil., D.Sc., Senior Scientist for Biosensors and Biomaterials, United States Navy; Joseph DeSimone, Ph.D., Chancellor’s Eminent Professor of Chemistry, University of North Carolina; Alan Rudolph, Ph.D., Director, Chemical and Biological Technologies directorate, Research and Development enterprise, Defense Threat Reduction Agency (DTRA) and Klaus Schäfer, M.D., MPH, Former Deputy Assistant to the Secretary of Defense, Chemical and Biological Defense Program .
- 51 February 29 – Invited Plenary Speaker:** “One Planet ...Two Worlds: A Holistic View to The Global Village & Our Islands of Excellence”, Special Session for Redefining Interoperability and Standardization, DHS Inter Agency Board (IAB) Mtg, San Antonio TX.
- 52** New Article on the IEEE Society for Social Implications of Technology (SSIT) magazine called – The Technology and Society Magazine on **Complexity in Science and Technology Policy ...Symptom or Disease?** March 2012.
- 53** Invited Speaker: “*Convergence of Communications, Computer Science and Biology, to transform Healthcare*” Fundacion Areces, Madrid Spain March 27, 2012  
<http://www.fundacionareces.es/fundacionareces/cargarAplicacionAgendaEventos.do?verPrograma=1&identificador=1379>
- 54** Invited Inaugural Speaker New Series at the U. Cordoba entitled: “*Repercusiones de la Ciencia, la Tecnología y los Cambios Climáticos en La Aldea Global*” March 28, 2012 Cordoba, Spain –
- Newspaper from Cordoba- [Un mundo, dos realidades - Contraportada - Diario Córdoba](#)
  - Luis Kun aboga por la interoperabilidad para resolver los problemas de la Aldea Global; <http://www.uco.es/servicios/comunicacion/component/k2/item/82328-20120329>
- 55** Special Mini-symposium on Crisis and Disasters at WC2012 – Beijing 5/27/12
- 56** Special Workshop on Crisis Management and Disasters at WC2012 – Beijing 5/28/12