



# Services & Supports

# **IFMBE NEWS**

International Federation of Medical and Biological Engineering  
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## CONTENT

IFMBE News  
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## EDITORIAL ————— 03

- Services & Supports

## IFMBE EXPRESS ————— 04

- Call to Host the IUPESM World Congress in 2021
- IFMBE/IAMBE EARLY CAREER AWARDS
- In Memoriam – Eulogy to Lodewijk Bos

## REPORT FROM IFMBE: Regions ————— 17

- Report on CLAIB 2014
- Report on APCMBE 2014 & GCBME 2014
- Summary of 16th NBC

## FEATURE COLUMN: the World Congress ————— 30

- IUPESM WC2015 Introduction
- IFMBE Travel Awards



## EDITORIAL

### Services & Supports



Kang Ping, Lin  
NEWS EDITOR

Dear friends,

After many successful regional conferences endorsed by IFMBE in 2014, we are looking forward to the coming World Congress in 2015. IFMBE News as IFMBE witness of all activities will continue to report information that you may be concerned about.

First of all, IFMBE officials released some important news: the World Congress 2021 is looking forward to your proposal. IFMBE/ IAMBE EARLY CAREER AWARDS extended its deadline for applications to March 1, 2015. In addition, IFMBE lost another old friend after Jan Maria Wojcicki. Thanks to Luis Kun, we published In Memoriam – Eulogy to Lodewijk Bos in this issue.

In October of 2014, three IFMBE regional conferences were held successively. The VI Latin American Conference on Biomedical Engineering (CLAIB 2014) was held in Paraná

of Argentina, from October 28 to 31, 2014. The 9th IFMBE Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2014) and the 1st Global Conference on Biomedical Engineering (GCBME 2014) was held in Tainan from October 9 to 12, 2014. Also, IFMBE 16th Nordic–Baltic Conference was held in Gothenburg of Sweden from October 14 to 16, 2014.

The World Congress as the most important congress of IFMBE was held every three years. In Feature Column of this issue, we introduced the coming WC2015, and one of IFMBE important supporting policies: IFMBE Travel Award. Now, applying to this IFMBE assistance program should be sent before or on February 15, 2015. Don't miss your final chance!

IFMBE was always devoted to render service to all its members and support young members to be part of IFMBE activities. IFMBE News has experienced 97 issues, aimed to serve all members with IFMBE's dynamics. We sincerely thank you for your continue supports and concerns.

I wish you all a happy new year in 2015!





### Call to Host the IUPESM World Congress 2021

Dear Colleagues:

The IUPESM World Congress on Medical Physics and Biomedical Engineering is the triennial event of the IOMP and IFMBE. Previous such IUPESM World Congresses have solidified the unifying concepts of the physical and engineering sciences in medicine. The next two World Congresses in Toronto 2015 and Prague 2018 will strengthen the co-operation within IUPESM.

At this time, the IUPESM Congress Coordinating Committee (CCC) invites interested countries to submit a “Letter of Interest in Hosting the IUPESM 2021 World Congress” and return it to me, Professor Herbert Voigt, President of IUPESM at: [hfv@bu.edu](mailto:hfv@bu.edu) and copy to Professor James Goh, Secretary General of IUPESM at: [biegohj@nus.edu.sg](mailto:biegohj@nus.edu.sg)

**The deadline for receipt of this “Letter of Interest” is 1 March 2015.**

Upon receipt of the letter of interest I will place your country on the list of applicants to host the IUPESM 2021 World Congress. The next step is to

submit a complete electronic application with to organize the IUPESM 2021 World Congress to me. The documents for this are appended below. Note that applications to host the World Congress must represent both the biomedical engineering and the medical physics National Members from the host country; i.e., nations with only one of these two constituent societies in IOMP and IFMBE are not eligible to host an IUPESM World Congress.

**The deadline to submit a complete proposal is 15 April 2015.**

The IUPESM Administrative Council expresses concern with the amount of work associated with planning, preparation and management of a World Congress. To address this problem and give “smaller National Members” the opportunity to host IUPESM World Congresses in the future, the IUPESM is preparing to develop capacity to offer support if required. Such support could be in the form of IUPESM organization of the scientific program, help in preparation and running of the Congress, proactive financial support and/or other assistance



## IFMBE EXPRESS

as requested. Alternatively, groupings of National Members may wish to consider submission of collaborative bids to share the extent of the workload. The level of support, if needed, will be negotiated between the host country and the IUPESM Congress Coordinating Committee prior to the selection voting process in Toronto. The written procedures for the selection of the World Congress site are appended.

The CCC eagerly awaits your letter of interest and stands prepared to assist you in preparing a proposal that clearly highlights the advantages and potential

of your setting for the triennial IUPESM World Congress.

Bestwishes,

Herbert Voigt  
President, IUPESM  
Email: [hfv@bu.edu](mailto:hfv@bu.edu)

Note: Sample "Letter of Intent", Criteria for Selection and Proposal Form can be downloaded at:

<http://ifmbe.org/invite-host-wc2021/>  
or <http://www.iupesm.org/world-congresses/invite-wc2021/>

**WORLD CONGRESS 2015** will be held in Toronto, Canada.

**WORLD CONGRESS 2018**  
will be held in Prague, Czech Republic.

Invitation to Host  
**IUPESM 2021 World Congress**

**WORLD CONGRESS 2021**  
Looking forward to your proposal.



## IFMBE EXPRESS



### INTERNATIONAL FEDERATION FOR MEDICAL AND BIOLOGICAL ENGINEERING

Affiliated with the International Union for Physical and Engineering Sciences in Medicine

INTERNATIONAL ACADEMY FOR MEDICAL AND BIOLOGICAL ENGINEERING

## IFMBE/IAMBE EARLY CAREER AWARDS for Young Faculty / Research Institution Members

**DEADLINE FOR APPLICATIONS EXTENDED TO MARCH 1, 2015**

The new IFMBE/IAMBE Early Career Award (ECA) highlights the commitment of the IFMBE to support and encourage promising young researchers at an early stage in their career. Likewise, young researchers in private research institutions or industry research groups are invited to apply. In so doing, IFMBE intends to strengthen the long-term basis and development of BME at the university as well as at the private research institution/industry level. Particular emphasis is given to countries with a low economic background, and to geographical diversity. **The Award consists of a certificate and a monetary award. Awards are given at each IFMBE World Congress to one individual from each of the following four geographic regions: North America, Central & South America, Europe & Africa, Asia-Pacific.**

The ECA highlights the commitment of IFMBE to support and encourage promising

young researchers at an early stage in their career. Likewise, young researchers in private research institutions or industry research groups are invited to apply. In so doing, IFMBE intends to strengthen the long-term basis and development of BME at the university as well as at the private research institution/industry level. Particular emphasis is given to countries with a low economic background, and to geographical diversity.

The application from a specified geographic region should be for work carried out in that region and the applicant should reside in that region at the time of submission. Applicants should have a PhD awarded not more than 7 years prior to the specified submission deadline for the application. **For this round, applications must be submitted by March 1, 2015.** It is desired that one of the award recipients will be an applicant from one of the countries with low resources according to UN criteria.

All areas of BME are considered. The



## IFMBE EXPRESS

applicant should demonstrate a strong background in the mathematical, physical, engineering or informatics' sciences as they relate to medicine and/or biology.

Applications (in pdf form) must include:

- (i) the CV of the applicant,
- (ii) a list of publications, and
- (iii) a short personal statement (1000 words max.) outlining the scientific achievements and future interests of the applicant.

Applications are to be submitted to:

Prof James Goh, IFMBE Vice-President  
Chair, IFMBE Awards Committee

Email address: [biegohj@nus.edu.sg](mailto:biegohj@nus.edu.sg)

Award recipients will be selected by the IFMBE Awards Committee and notified of their selection no less than three months prior to the **World Congress on Medical Physics and Biomedical Engineering**, which will be held in Toronto, Canada, June 7-12, 2015. More information about the meeting can be found at <http://wc2015.org>.

The ECA recipients shall be obliged to send an abbreviated abstract for IFMBE Newsletter. The Awardees will be asked to

present a talk at the ensuing IFMBE World Congress and to write a paper for submission to Medical and Biological Engineering and Computing. The Awardees shall be introduced during the Closing Ceremony of the IFMBE World Congress.

The monetary price awarded to the ECA awardees by the IFMBE is in the amount of 3,000 USD. The awardee shall cover the travel costs and the costs of stay during the presentation at the World Congress. IFMBE will request the IFMBE event organizers to waive the registration fee for the awardees. The IFMBE Administrative Council will review the amount of the monetary award every three years.



### In Memoriam – Eulogy to Lodewijk Bos

By Luis Kun



Losing a colleague unexpectedly, at any time in your life is a very sad and confusing time. Yet it is a reality check that combines the good times spent together with the sadness of the news and a reflection regarding our own mortality. When this person is in addition a good friend, the task of writing a eulogy becomes more difficult because your heart and sentiments interfere deeply with the logic of writing a piece in this precise moment where all you want is to focus on the departed one and find the right words to honor him.

Although what follows are personal observations, I have tried through my own lenses to project what his life and work meant to others. Obviously each of you, that knew him, either personally or professionally you may have other stories to share. Next year during the World Congress 2015 of Medical Physics and Biomedical Engineering which

will take place in Toronto, I am planning (with my colleague, Andre Linnenbank) to have a special session to honor Lodewijk. I hope that you will be able to join us on that occasion to share with us your own stories.

I met Lodewijk many years ago through my friend Swamy (Laxminarayan) and instantly our minds “connected”. Unfortunately with Swamy’s unexpected passing away on September 2005, already nine years ago, the dynamics changed. Since Swamy’s passing, his youngest brother, Raj and I became very close friends and I invited him to come to Munich for the World.

Congress in Medical Physics and Biomedical Engineering. During the inaugural party I introduced him to Lodewijk and instantly a great friendship got expanded one more time. Both Lodewijk and Raj became part of IFMBE’s Global Citizen Safety and Security Working Group.



World Congress, Munich September 2009, at the inaugural party from right to left: Lodewijk Bos, Rajaram Lakshminarayan and Luis Kun.





## IFMBE EXPRESS

Since the summer of 2010 I had the pleasure and honor of working with Lodewijk as co-Editors in Chief of Springer's Journal of Health and Technology. After the 2009 World Congress I had some conversations with Joachim Nagel regarding the creation of a new Journal and the possibility of working together with Lodewijk as Editors in Chief of this New Journal. The following summer (2010) we had a series of meetings and discussions over some wonderful lunches and dinners in Stuttgart with both Joachim and Monika Nagel and later joined by Christoph Baumann from Springer, defining what the new journal (for IUPESM) was going to be like. Soon after we wrote together the inaugural editorial which reflects well the spirit we shared on that occasion. Entitled: "Just another journal? No, a different one!" (Introductory Editorial). Health and Technology, is available from:

URL:<http://www.springerlink.com/content/w8383115811w8g7g/>

Lodewijk didn't share much information regarding his family, however at a personal level, on August 19th 2011 he wrote: "I have the sad duty of informing you of the passing away of my mother (the day before), leaving behind her husband of almost 57 years, 2 sons, a daughter and a daughter in law as well as 4 grandchildren".



Five years later in September 2013, during MEDICON 2013 in Sevilla, Spain, during the final dinner ceremony we met again. From left to right: Robert Istepanian, Luis Kun, LodewijkBos and RajaramLakshminarayan enjoying "Laura Roa's party".

### Wired Differently

To say that Lodewijk was "different and unusual" would not be enough to explain, to the world or even to some of you reading these lines, what his approach really meant to an ordinary citizen of the world. His candor and appreciation of life was one of sharing circumstances that others would consider private or out of line. Lodewijk believed not only on the use of social media for communication and dissemination purposes but that individuals around the globe could improve (the health of others suffering from similar conditions) outcomes by sharing both their own experiences, good and bad ones so that we could all have a set of



## IFMBE EXPRESS

“lessons learned” derived from our own living experiences. Here is an example of some segments he wrote on his personal blog entitled: [Life of a Chemo Patient Lodewijk Bos’ Personal Blog - Unhappy again](http://lodewijkbos.com/2012/08/17/unhappy-again/) and which can be found at :

<http://lodewijkbos.com/2012/08/17/unhappy-again/> ~ by lodewijk bos on August 17, 2012

“On July 2 I had to have surgery on my left foot, as something was growing out of the side of it. As my GP told me that it was a tumor, although for the appearance of it benign, I decided to pay a visit to my oncologist, just to get an informed diagnosis. My oncologist called a dermatologist and both came to the conclusion that it most definitely was benign. As it was at the inner outside of the foot, it was beginning to hinder my walking abilities, already not the best part of my motor capacities. So to surgery it went.

And from there on it went wrong, seriously wrong. I was told I should not stand or walk on that foot for at least two days. And I was sent off, on foot. So by the time I arrived at the reception desk 5 floors down there was a whole blood trail running through the building. I was given new bandaging and this time someone went to find a wheelchair. I was told the bandages could be taken off after 2 days. Fortunately I kept the information of the

wound nurse that helped my to get through the open leg ordeal, 2,5 years ago. She came and started to take away the bandages. Her first words were “That could have been done nicer”. Nobody was really surprised when the next day the threads tore and left a quite big open wound. I will save you the panicking discussion with the surgeon who had the impression he had seen something malign on the removed tissue, so suggested to take away a larger piece of the foot and cover it with some skin transplant. It was the surgeon’s proposal, although it was decided that my oncologist would take the lead if necessary. The surgeon’s call came on Friday midday so I didn’t talk to my oncologist till Monday. He completely annulled the surgeon’s decisions.

It took weeks to find out that when left alone, the healing speed of the wound could easily be beaten by the slowest kind of snail. So the nurse suggested to use a new kind of bandage [Promogran Prisma](#). And lo and behold, it seems to work.

However, since we started the Promogran, my neuropathy worsened. The open wound on top of my neuropathy was already hell, but that diminished considerably after a couple of days. However, after applying the new bandage, my foot started hurting much more, but above all, my chemo brain came



## IFMBE EXPRESS

back in full force. When I get out of bed I stumble, having to catch myself not to fall. After 5 minutes that acute problem disappears (balancing problems remain however), but then the next one appears. My eyes start to spontaneously turn direction nose bridge, as if I were squinting. Which makes concentrating a very complicated business. Combined with the physical balance problems, it leaves me, activity wise, almost paralyzed. Oh, and my tinnitus is worse.



than it has been for years. So I sincerely hope that the wound heals soon. As you can see from the picture, walking is no option, the wound is over 1,5 cms large.

Oh, and if you know of any neurologist who might be knowledgeable about this kind of problems (see "[Chemo brain. Recognition?](#)"), please contact me in the comment field."

Lodewijk Bos was a person of vision who understood strategy very well. He was a trusted individual to his friends and his

integrity and quality of outcomes unsurpassed. Yet his

operational capacity, to me, was one of the most impressive characteristics he had and that I have ever encountered before I met him. It was always a pleasure discussing with him any type of challenge we encountered because of his disposition to listen and to implement quickly whatever was decided or needed. For example due to his effort, personal involvement and commitment, every time you attended the ICMCC annual conference, as you registered the first day to the meeting, you were given a hard-bound book which contained all the papers to be presented.

After Swamy's sudden departure in 2005, the "Swamy Laxminarayan Lecture" was created and the first to deliver this keynote was Prof. Brian O'Connell, former President of the IEEE Society of Social Implications of Technology (SSIT). Unfortunately, Brian died shortly after this event and I informed Lodewijk. Within 24 hours, due to his work, the ICMCC website had Brian's professional life posted as well it informed the reader regarding his departure... In June 2009 my colleague Robert Mathews and I put together an Interoperability Summit entitled Healthcare Reform or Healthcare Transformation at the National Academy



## IFMBE EXPRESS

of Science / Engineering in Washington DC. About 30 professional organizations (i.e., ICMCC, IFMBE, SSIT, AIMBE, EMBS, Computer Society, etc.) and 23 different Federal Agencies / Departments attended as well as many of you. Lodewijk website was the first place where any type of comments regarding this meeting were published...

On March 2011, during the Fukushima earthquake – tsunami and later nuclear / radiation crisis, through the IFMBE Global Citizen Safety and Security WG I was trying to help colleagues and the people from Japan. I spoke with Lodewijk and within 24 hours he had at the ICMCC website a blog where individuals could ask questions and relevant materials could be shared , etc.

Physically I saw him for the last time at the MEDICON 2013 dinner (picture 2). We spoke a lot during the summer months since in August we were publishing this special number of the Journal on “Global Citizen Safety and Security” and as usual ... he was very excited and pleased with the outcome.

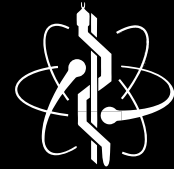
As I was leaving the CDC in Atlanta to come to the Washington area, a dear friend gave me a poem entitled: “Success”, by Ralph Waldo Emerson .

## SUCCESS

To laugh often and much  
to win the respect  
of intelligent people  
and the affection of children;  
to earn the appreciation  
of honest critics and endure  
the betrayal of false friends;  
to appreciate beauty,  
to find the best in others;  
to leave the world  
a bit better, whether  
by a healthy child,  
a garden patch  
or a redeemed social condition;  
to know even one life  
has breathed easier  
because you have lived.  
That is to have succeeded.

I have not shared these words with members of this community, but I believe that Lodewijk Bos not only fits this definition of success but has joined now a list of colleagues who departed earlier and who have made the life of many better.

I am very sad for his sudden disappearance from our lives, yet I am thankful for having the opportunity to meet him and share moments of my life with him and all of those that I met through him.



## IFMBE EXPRESS

Please let me or Andre if you are interested in participating on a special session to be held in Toronto 2015 during the World Congress. Part of the session will be presentation of technical papers, and immediately before or after this session, a second part sponsored by the IFMBE Global Citizen Safety and Security WG will be of a social nature, with the purpose of allowing all of those wanting to share stories to be able to do it. Probably (at this time committed) Lodewijk's brother will be present.

Thank you Lodewijk for your contributions, for your friendship and for sharing yourself with us. You will not be forgotten ... Your friend and colleague, Luis Kun.

For those interested here is a summary of

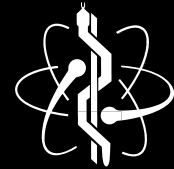
### **Lodewijk Bos – Biography**

After a short career in the arts, he received an M.A., Lodewijk Bos had a career as international conference organiser. In 2003 he started the International Congress on Medical and Care Compunetics.

In 2004 he was founder of the International Council on Medical and Care Compunetics, ICMCC. Since 2006 Drs Lodewijk Bos is

member of the Administrative Council of the WABT-ICET-UNESCO, charged with Strategic Planning and Programs. In 2010 he was appointed Editor-in-Chief of the Springer-IUPESM journal Health and Technology.

Lodewijk Bos had his own blog on the ICMCC website. Drs Lodewijk Bos was member of - the IFMBE working Group on "Medical and Biological Engineering Contributions to the Safety and Security of Individuals and Society"; - the IFMBE Ethics Committee; - Member of the advisory board of the World Health Care Congress Middle East; - Member of the advisory board of the World Health Care Congress Europe; - the advisory board of the European Privacy Institute. - He was co-editor of the series on Medical and Care Compunetics (IOSPress); - He is series editor of "Communications in Medical and Care Compunetics" (Springer-Verlag). - 2011-2012 Member of the advisory board of the Dutch diabetes web portal Mijn Zorgpagina; - 2005-2009 Member of the NEN normcommissie "Informatievoorziening in de zorg"; - 2004-2009 Member of the editorial board of the Journal on Information Technology in Healthcare. 2013 Session Chair at the Medicon 2013, September 2013, Seville, Spain. Guest presenter at the Coventry University, UK. June 2013. Invited speaker at the e-Health workshop organized by the WABT



## IFMBE EXPRESS

and IITM, 30 May 2013, Budapest, Hungary. See full speech. Publicity co-chair, Europe, HIS2014. 2011 Invited keynote at WHCC Middle East, 11-13 December, Abu Dhabi, UAE. Invited keynote at Najaarscongres Geneeskundige Vereniging, 4 November, Soestduinen, Netherlands. Invited keynote at 1st International Research-to-Practice Conference, 22 September, Novosibirsk, Russia. Invited keynote at XII Congreso Nacional de Documentación Médica, 2-4 June, Málaga, Spain. Invited speaker at "Toekomstmuziek", 14e symposium Hans Mak Instituut, 13 May 2011, Bussum, The Netherlands. Moderator of the sessions Future of Health IT Systems for Improved Outcomes and Emerging PHR and mHealth Technologies to Improve Patient Care at WHCC Europe 2011, 13-14 April 2011, Brussels, Belgium. 2010 Moderator of session on Best Practices to Improve Patient Experience and Empowerment at WHCC Europe 2010, 19-20 May 2010, Brussels, Belgium. Invited speaker at e-Health in Estonia, 13-15 October 2010, Tallinn, Estonia. Invited keynote at WHCC Middle East, 5-7 December, Abu Dhabi, UAE. 2009 Invited speaker at the World Health Care Congress Europe 2009, 13-14 May 2009, Brussels, Belgium. Invited speaker at

the World Congress on Medical Physics and Biomedical Engineering, 7-12 September 2009, Munich, Germany. Nominee WTN Ethics Award 2009. Member of the Summit Advisory Council of the Interoperability Summit, June 1-2, 2009, Washington, USA. Member of the advisory board of the World Health Care Congress Europe 2009, 13-14 May 2009, Brussels, Belgium Member of the advisory board of the 6th Annual World Health Care Congress, 14-16 April 2009, Washington, USA 2008 Invited speaker at the XIII WABT General Conference, 16- 18 October 2008, Fiuggi, Italy (cancelled) Invited speaker PHSCG Conference, Chesford Grange, UK, Member of the advisory board of the World Health Care Congress Europe 2008. Member of the Programme Committee of the 2008 International Conference on Semantic Web and Web Services. 2007 Invited speaker International Conference on Urban Health 2007, Baltimore, USA, Member of the advisory board of the European Leadership Summit on Chronic Care 2007, Member of the advisory board of the International Conference on Urban Health 2007, Member of the advisory board of the WHCC Europe 2007, Member of the advisory board of the international conference committee of the



## IFMBE EXPRESS

IV Latin American Congress on Biomedical Engineering (CLAIB2007) 2006 Track chair for Building Public Infrastructures via e-Networks of the The Eleventh International Workshop on Telework, August 28-31, 2006, Canada. Member of the international programme committee of the BIOPoM 2006 Conference, June 29, 2006, UK. Discussant on behalf of the World Bank for the presentation to the WHO of a report on the use of ICT in developing countries. Co-editor of an IJMI special issue. 2005 Member of the High level Piloting Committee for the Virtuel Euro-Mediterranean Hospital (Algeria) Member of the main jury for the Dutch National ICT Awards 2005. Speeches Click here for an overview of his speeches. Publications Articles Bos L. Patient Empowerment – A Two Way Road. In: Wickramasinghe N, Bali RK, Suomi R, Kirn S, Editors. E-health: Critical Issues for the Development of Sustainable E-health Solutions. Springer Verlag. 2012. Bos L. Patient expectations in the digital world. In: Bos L, Carroll D, Kun L, Marsh A, Roa LM, Editors. Future Visions on Biomedicine and Bioinformatics – A Liber Amicorum in Memory of Swamy Laxminarayan. Communications in Medical and Care Compunetics 1. Springer Verlag.

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## IFMBE EXPRESS

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<http://articles.icmcc.org/category/biography/#sthash.5DZM869R.dpuf>





## REPORT FROM IFMBE: Regions

### Report on CLAIB 2014



Ariel Braidot  
Conference Chair,  
CLAIB 2014



Alejandro Hadad  
Conference Co-Chair,  
CLAIB 2014

The VI Latin American Conference on Biomedical Engineering (CLAIB 2014) was held in Paraná, the capital of the Argentinian Province of Entre Ríos, from October 28 to 31, 2014. The regional conference of the IFMBE is held every three years in a Latin American Country, and this was the first time that CLAIB was brought to Argentina. The Conference Chair was Prof. Ariel Braidot and the Co-Chair was Prof. Alejandro Hadad, both from the National University of Entre Ríos (UNER), and the Argentinian Society of Biomedical Engineering (SABI - host IFMBE member society). The organization of the Latin American Conference on Biomedical Engineering was carried out by the Regional Council of Biomedical Engineering for Latin America (CORAL), SABI and the Faculty of Engineering, UNER (FI-UNER). It was also sponsored by the IFMBE and IEEE-EMBS among other organizations.

The conference organization relied on a Regional Conference Organizing Committee – CORAL – with representatives from Latin American IFMBE member societies, an International Scientific Committee of 256 members, and a Local Organizing Committee of 100 members. The conference venue was the Convention Center of the Maran Suites Hotel and Howard Johnson Mayorazgo (see Fig. 2), located on the banks of the Paraná River (see Fig. 3).



Fig. 1 - Opening Ceremony. Ariel Braidot (Conference Chair) & representatives of IEEE-EMBS, IFMBE, CORAL & SABI

The International Scientific Committee evaluated more than 400 scientific articles (peer reviewed - double-blind by three independent reviewers).

This conference covered 13 themes/topics:

- Bioinformatics and Computational Biology
- Bioinstrumentation; Sensors, Micro and Nano Technologies
- Biomaterials, Tissue Engineering and



## REPORT FROM IFMBE: Regions

### Artificial Organs

- Biomechanics, Robotics and Motion Analysis
- Biomedical Images and Image Processing
- Biomedical Signal Processing
- Clinical Engineering and Electromedicine
- Computer and Medical Informatics
- Health and home care, telemedicine
- Modeling and Simulation
- Radiobiology, Radiation and Medical Physics
- Rehabilitation Engineering and Prosthetics
- Technology, Education and Innovation



Fig. 2 – Convention Center from Paraná River



Fig. 3 – Paraná River from Convention Center

There were also 14 keynote talks delivered by distinguished international scientists as well as

academic and professional discussion panels relating to bioengineering and biomedicine. A number of companies and firms displayed their products and exchanged views with the participants. The CLAIB14 program also included 3 pre-conference courses.

\* Scaling and Multifractal: From Theory to Applications. Prof. Patrice Abry.

\* EMG-driven models in neurorehabilitation technologies. Prof. Darío Farina.

\* Function Model Calibration in Gait Analysis: Methods and Implementation. Prof. Adam Rozumalski.

The courses were held in the FI-UNER building (see Fig. 4).



Fig. 4 – FI-UNER building

The technical program was structured into 14



## REPORT FROM IFMBE: Regions

plenary and semi-plenary conferences, 26 oral sessions and 15 poster sessions (see Fig. 5).



Fig. 5 – Electronic Poster Session

The 14 keynote speakers were:

- Bruce C. Wheeler, PhD (University of Florida. President, IEEE-EMBS, United States)
- Ratko Magjarevic, Prof. DrSc. (University of Zagreb, Croatia).
- Dario Farina, Prof. Dr. (University Medical Center Goettingen, Germany).
- Shankar Krishnan, Ph.D. (Wentworth Institute, Boston, United States).
- Herbert F. Voigt (Boston University, United States) (see Fig. 6)..
- Patrice Abry, PhD (Physics Departement, Institut Ecole Normale Superieure de Lyon, France).
- José del R. Millán, Prof. Dr. (Center for Neuroprosthetics, Institute of Bioengineering. School of Engineering, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland)
- Adam Rozumalski, MS.(Biomed. Eng). (

Center for Gait and Motion Analysis, .Gillette Children’s Specialty Healthcare, USA).

- Guillermo Avendaño Cervantes, Ing. Biom. (CORAL President. Escuela de Ingeniería Civil Biomédica, Univ. de Valparaíso, Chile)
- Zviad Kirtava PhD. (Department of Internal Medicine, Tbilisi State Medical University, Georgia)
- Teresita Cuadrado, Prof., Dr. Cs. Mat. (Fac. de Ingeniería UNMdP. Inst. de Investigación en Ciencia y Tecnología de Materiales - CONICET – Univ. Nac. de Mar del Plata, Arg)
- Renato Garcia, Dr. Ing. (Instituto de Ingeniería Biomédica. Universidad Federal de Santa Catarina, Brasil)
- Luis Kun, PhD. (National Security Affairs . William Perry, CHDS. National Defense University, USA).
- Maximo Valentinuzzi PhD. & Federico Hortt. (UNT – Tucumán, Argentina)



Fig. 6 – Herbert F. Voigt Conference

With representatives from Latin American IFMBE member societies, during this



## REPORT FROM IFMBE: Regions

conference several IFMBE and CORAL meetings took place (see Fig. 7).



Fig. 7 – CORAL Meeting

The opening ceremony was held at the conference room of the Convention Center (Urquiza Room). The ceremony (Fig. 1) was chaired by Prof. Ariel Braidot (CLAIB 2014 Conference Chair). Also present were Prof. Bruce C. Wheeler (President IEEE-EMBS), Prof. Guillermo Avendaño (President of CORAL), Prof. Virginia Ballarin (President of SABI), Prof. Jorge Gerard (Rector of UNER) and Prof. Gabriel Gentileti (Dean of Faculty of



Fig. 8 – “3 de Febrero” Theater

Engineering, UNER.

The Opening Ceremony was followed by a Plenary Lecture by Prof. Dario Farina and in the evening, delegates experienced Argentinian culture at the “3 de Febrero” Theater (see Fig. 8) with folklore, tango, native dancing, etc. from different regions of Argentina.

Over 600 delegates participated in the conference (see Fig. 9), with representation from the four continents and 31 countries from all over the world, including the representative of the Chinese Society for Biomedical Engineering (IFMBE member society) Xiaohong Weng (see Fig. 10).



Fig. 9 – Opening Ceremony

CLAIB 2014 included a Young Investigator Competition with 10 finalists selected from 79 candidates. The Young Investigator Awards Committee was composed of members of the CLAIB 2014 Scientific Committee: Antonio José Rienzo Renato, Cesar Galindo (Chile);



## REPORT FROM IFMBE: Regions

Verónica Medina Bañuelos, Juan Manuel Gomez Gonzalez and Jorge Letichipia (Mexico); Myriam Cristina Herrera, Juan Pablo Graffigna and Pablo Diez (Argentina); Renato Garcia (Brazil); Franco Simini and Luis Kun (Uruguay); Alfredo Rosado (Spain); Jorge Castro Medina (Cuba); and Roberto Lavarello (Peru), and coordinated by the Chair of the YIC Awards Committee Alejandro Hadad.



Fig. 10 – Alejandro Hadad, Xiaohong Weng and Ariel Braidot

This Committee evaluated the presentations in the oral and poster sessions.



Fig. 11 – YIC for Biomedical Engineering – First Prize



Fig. 12 – YIC for Biomedical Engineering – Second Prize

The First Prize was awarded to Emiliano Ravera, from the National University of Entre Ríos (FI-UNER), Argentina, for his work “Stress in Human Pelvis Throughout the Gait Cycle: Development, Evaluation and Sensitivity Studies of a Finite Element Model”. The Second Prize was awarded to Saúl Calderón Ramírez and Jorge Castro from the University of Costa Rica, (PRIS-Lab), Costa Rica, for their work “Automatic cell segmentation and tracking in the NF- $\kappa$ B pathway using time-lapse fluorescence microscopy videos without nuclear staining”, and the Third Prize went to Flavio E. Spetale from the International Center French - Argentinian on Information Sciences and Systems (CIFASIS), for his work “Application of hierarchical function prediction in *Solanum Lycopersicum*”. The awards were presented by Prof. Ariel Braidot, Prof. Shankar Krishnan and Prof. Ratko Magjarevic (see Figs. 11 & 12).



## REPORT FROM IFMBE: Regions

Other activities taking place during the conference were:

-Academic Expert Panel & Student Panel IEEE-EMBS conducted by Martha Zequera Diaz (see Fig. 13).



Fig. 13 – Student Panel IEEE-EMBS

-Rehabilitation Engineering Meeting of SABI (see Fig. 12).



Fig. 14 – Rehabilitation Engineering Meeting

- Presentation of Nuclear Medicine Center in Oro Verde nearly to Faculty of Engineering – UNER (see Fig. 15).

-Panels of Professional Experiences (see Fig. 16) in which Clinical Engineers discussed cases related to their practice in their institutions (hospital, industry, etc.). Many of these panel members participated in the Commercial Exhibition (see Figs. 17 & 18).



Fig. 15 – Presentation of Nuclear Medicine Center



Fig. 16 – Panel of Professional Experiences



Fig. 17 – Commercial Exhibition



## REPORT FROM IFMBE: Regions



Fig. 18 – Commercial Exhibition

The gala dinner (see Fig. 19 & 20) was held in a building on the banks of the Paraná River.



Fig. 19 – Gala Dinner



Fig. 20 – Gala Dinner

The closing ceremony was preceded by a keynote lecture by Prof. Ratko Magjaveric and (Fig. 23) was chaired by Prof. Ariel Braidot. Prof. Ratko Magjarevic, Prof. Shankar Krishnan, Prof. Guillermo Avendaño, Prof. Virginia Ballarin and Prof. Gabriel Gentilleti were also present.

After the closing ceremony delegates went on a Boat Trip on the Paraná River (see Fig. 21).



Fig. 21 – Boat trip (indoor)

We congratulate all the committees, sponsors, institutions, participants, and individuals that helped to make the Conference so successful, and (see Fig. 22) send our best wishes to the organisers of the next CLAIB conference, which will be held in Bucaramanga, Colombia, in 2016.



Fig. 22 – Organizing Committee Members



Fig.23 - Closing Ceremony. Organizing Committee and Authorities IEEE-EMBS, IFMBE, CORAL, FI-UNER and SABI







## REPORT FROM IFMBE: Regions

### Report on APCMBE 2014 & GCBME 2014

The 9th Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2014) and the 1st Global Conference on Biomedical Engineering (GCBME 2014) were special conferences organized by the International Federation of Medical and Biological Engineering (IFMBE) - the world largest organization specializing in biomedical engineering.

There were 534 papers and 872 participants from 23 countries. The conferences were held at National Cheng Kung University (NCKU) in Tainan, Taiwan, from Oct. 9th -12th , 2014.

#### **Main Topics:**

1. Biomaterials and Tissue Engineering
  2. Biomechanics and Computational Bioengineering
  3. Biomedical Images and Signals
  4. Biosensors
  5. Medical Devices and Instrumentation
  6. Biomedical Robotics and Surgical Technology
  7. Neuroengineering and Rehabilitation Engineering
  8. Special Topics (e.g. Clinical Engineering Bioethics, Biomedical Engineering Education and Manuscript Writing)
- Distinguished guests at the opening

ceremony included the President of National Cheng Kung University- Prof. Huey-Jen Su, the President of the IFMBE- Prof. Ratko Magjarevic, the President of the International Union for Physical and Engineering Sciences in Medicine (IUPESM)- Prof. Herbert F. Voigt, the director-general of the Southern Taiwan Science Park (STSP), the chairman of the Taiwan Medical and Biotech Industry Association (TMBIA)- Frank Huang, and many plenary, keynote and invited speakers. The opening lecture “ Biomechanics: the Past and Future” was presented by the Prof. Kai-Nan An, from the Mayo Clinic College of Medicine, USA.

GCBME 2014 and -APCMBE 2014 provided an excellent opportunity for the exchange of ideas and knowledge concerning the latest research and development in all areas within the field of biomedical engineering. They strongly encouraged younger researchers to become involved in this rapidly growing field and to be part of the continuing development of medical technology innovation needed to serve tomorrow's healthcare needs.

GCBME 2014 and APCMEB 2014 provided a great opportunity to bring together biomedical engineers, medical practitioners, medical physicists, engineers, orthopedics,



## REPORT FROM IFMBE: Regions

researchers, students, and communities around the world in order to share their latest research work and innovative developments in tissue engineering, biomaterials, biomedical images and signals, biomechanics, medical devices and instrumentation and other fields in BME. Generally speaking, this meeting provided a good platform for researchers to exchange and understand the trends of development in BME. The supporting institutions and sponsors contributed considerably to the success of the conference, which also provided a forum for improving the development of medical devices in Taiwan.

### Photos from the Conferences:



Opening Remark\_ Conference chair,  
Prof. Fong-Chin Su



Opening Address\_ Vice President of NCKU



Opening Performance



Group photo



## REPORT FROM IFMBE: Regions



Opening lecture\_ Prof. Kai-Nan An from the Mayo Clinic, USA



Welcome Reception\_ Mayor Lai



Plenary speaker\_ the IFMBE President, Prof. Ratko Magjarevic



IFMBE Meeting



IFMBE Meeting



Symposium – Dental Devices and Healthcare



## REPORT FROM IFMBE: Regions



Welcome Reception



Poster Presentation



Exhibitor



Award Presentation



Award Presentation



Banquet in Evergreen Plaza Hotel Tainan



## REPORT FROM IFMBE: Regions

### Summary of the 16th NBC - Nordic-Baltic Conference on Biomedical Engineering & Medical Physics

IFMBE's 16th Nordic–Baltic Conference was held in Gothenburg on Sweden's west coast on October 14-16, 2014. NBC was jointly held together with the annual national meeting Medicinteknikdagarna, arranged by the Swedish society MTF (SvenskFöreningför MedicinskTeknik&Fysik). All in all 433 registered delegates participated at the Swedish Fair congress hall in central Gothenburg.

The general theme of the conference was Strategic Innovation. In total the conference comprised of 3 plenary session, 15 sessions and 3 debates/panel discussions, excluding the different social events. The various sessions included themes like Neuroengineering, Medical imaging, Biomedical signal processing, Physiological measurements and biomedical optics, Biomedical operations and maintenance, Deviation, Ehealth/ICT and more.

Of the total 102 abstracts, 33 were NBC abstract published in the NBC proceedings that can be downloaded at the following link:

[http://www.malmokongressbyra.se/kongress/download/1423\\_nbcproceedings.pdf](http://www.malmokongressbyra.se/kongress/download/1423_nbcproceedings.pdf)

The accompanying exhibition attracted 28 exhibitors, of which 2 where also main congress sponsors and 4 sponsors. In close proximity of the company exhibitions was also a poster session.

In summary the congress was successful with a broad and interesting program with lots of inspiring and educational talks. The meeting's aim was to inspire increased triple helix collaborations between health care providers, academia and the medtech industry.



## FEATURE COLUMN: the World Congress



## IUPESM World Congress on Medical Physics and Biomedical Engineering

*June 7-12, 2015*

*Toronto, Canada*

Canada is proud to host the next IUPESM World Congress on Medical Physics and Biomedical Engineering (IUPESM WC 2015), to be held at the Metro Toronto Convention Centre, June 7 - 12, 2015. The Canadian Medical and Biological Engineering Society (CMBES) and the Canadian Organization of Medical Physicists (COMP) have joined forces to host this international event. The Congress is sponsored by the International Union of Physical & Engineering Sciences in Medicine (IUPESM) and its member organizations, the International Organization for Medical Physics (IOMP) and the International Federation for Medical and Biological Engineering (IFMBE). The Congress will also serve concurrently as the annual meetings for both CMBES and COMP in 2015.

The IUPESM World Congress attracts biomedical engineers and physicists from around the globe. IUPESM World Congress 2015 offers an exceptional opportunity to showcase the breadth and caliber of biomedical engineering and medical physics from around the world. The Congress embraces all aspects of biomedical engineering and medical physics and welcomes everyone who is working in these fields or has an interest in them.

### **Congress Themes**

- Global Health Challenges
- Evidence and Health Informatics
- Women in Biomedical Engineering and Medical Physics
- Urban Health and Future Earth
- Next Generation Medicine



## FEATURE COLUMN: the World Congress



The Congress is co-chaired by David Jaffray (Medical Physics) and Tony Easty (Biomedical Engineering). Together with the dedicated members of the Congress Organizing Committee and other Planning Committees, they are committed to organizing a truly memorable event. Your active contribution is welcome and you are encouraged to submit abstracts and papers for presentation at the World Congress, and to attend the engaging sessions and social events offered.

The World Congress will consist of a series of parallel tracks on a wide range of topics of interest to the medical physics and biomedical engineering communities. High-level themes are also identified, and these run through the Congress, embracing submissions from both disciplines, and from a variety of tracks, as appropriate. Authors are invited to identify the track that they wish to submit to, whether their submission fits within an identified theme, and whether they feel the audience would be that of medical physics, biomedical engineering,

both, or others. Authors are encouraged to submit to all tracks from a world perspective, including high, medium and low resource settings. Accepted abstracts will be presented as oral or poster presentations. The call for abstracts and posters are currently open. The submission deadline is January 23, 2015.

Each day will feature a world renowned speaker giving a plenary keynote address representing one of the five Congress themes. The Scientific Program will also highlight speakers from around the world who have been invited to speak on the nineteen different Scientific Program tracks.

If your work is related to health and technology, in either healthcare delivery or related industry, you will benefit from attending the Continuing Education Program at the World Congress. The World Congress is the premiere meeting for medical technology professionals and will have a more comprehensive Continuing Education



## FEATURE COLUMN: the World Congress



Program than at any other Medical Physics or Biomedical engineering meeting. The Continuing Education Committee and Professional Standards Committee are pleased to announce a comprehensive list of world renowned faculty and speakers that have been invited to present on topics covering the entire spectrum of Medical Physics and Biomedical Engineering.

The World Congress Continuing Education Program consists of separate tracks for Biomedical Engineering and Medical Physics, as well as a joint track covering topics related to both. The Continuing Education Program will offer sessions in English, French and Spanish! The Continuing Education Sessions encompass a wide area of current and emerging practices and technologies including:

1. Medical technologies used in diagnostic radiology, nuclear medicine, and radiation therapy, including their ancillary equipment,

- operating processes and their calibration
2. Information technology standards, equipment, software, and advanced algorithms
3. Quality and risk management processes and tools, including AAPM TG-100, failure mode and effects analysis, human factors engineering
4. Systematic technology planning, procurement and equipment selection
5. Standards and best practice in clinical engineering and technology management
6. Strategies and guidelines in medical device research, development, and commercialization
7. New frontiers in biomedical engineering and medical physics
8. Experience and tips for academic publications and grant applications
9. Theories and observations in professional education and training

Besides the scientific and educational sessions, the World Congress will also





## FEATURE COLUMN: the World Congress



feature exciting social events, all planned to foster the networking atmosphere and a wide variety of tours available before and after the Congress so that delegates may experience all that the region has to offer.

The Metro Toronto Convention Centre is located right in the heart of downtown Toronto and provides a truly exceptional venue while offering a superb variety of restaurants, accommodation and tourism opportunities close by. One of Canada's best kept secrets, Toronto is on par with New York City, San Francisco and Chicago when it comes to cultural attractions and urban sophistication. The landmark CN Tower is the tallest freestanding structure in the world. Stroll next door and experience Ripley's Aquarium as you explore the wonders of the sea, catch a Blue Jays Baseball game at Rogers Centre, or just walk around the massive engineering marvel. Check out the Royal Ontario Museum, the largest in Canada with its fascinating archaeology and natural history exhibits, and the Art Gallery of Ontario, with a fine

collection of European and Canadian works. You won't want to miss the electric shops and restaurants on Queen Street West or the elegant boutiques and fine restaurants in Yorkville. While in the area, visitors can take a day trip to Niagara Falls or take a break right next door and experience Ontario's wine country. Toronto and the surrounding areas are a great family destination and most attractions are child-friendly. The city itself is clean, safe and easy to explore either on foot or by public transportation.

Registration and accommodation bookings are now open through the online registration system. The Early Bird registration deadline is: March 31, 2015. To register, or to submit an abstract or full paper, or to simply get more information about the World Congress, please visit [www.WC2015.org](http://www.WC2015.org). Be sure to also subscribe to the World Congress newsletter to receive the latest news and important updates!

See you in Toronto in June 2015!



### IFMBE Travel Awards

#### INTRODUCTION

1. The goals of the program are: to assist medical and biological engineers from IFMBE member organizations in developing countries to participate in the World Congress on Medical Physics and Biomedical Engineering (IUPESM WC 2015) and help them to become more effective in promoting the advancement of medical and biological engineering in their own countries; and to foster international co-operation in the field of biomedical engineering between all member countries of the IFMBE.
2. An award of \$1,000 to \$3,000 depending on travel distance shall be made to each successful applicant to partially cover the registration fee and travel expenses to attend the WC2015 in Toronto, Canada.
3. To be considered for the award, please download this form and submit the application following the instructions.

#### GUIDELINES FOR FUNDING

Candidates who comply with all the

mandatory requirements shall be assessed and scored according to the evaluation criteria shown below.

#### A. Mandatory Requirements

1. The applicant must be a medical, clinical, or biological engineer from an IFMBE member organization.
2. Application must be submitted through the IFMBE national organization by email, or counter signed by the officer.
3. National organization must have paid the IFMBE membership dues or exempted from payment.
4. Except for certain regions underserved, the applicant must personally give a presentation for which he/she is a first author.
5. Maximum number of IFMBE awards is determined based on the biomedical engineering population of the country on record. For example, if a society has two IFMBE delegates, the maximum number of awards is two.
6. To receive an IFMBE award, the applicant must have not received any previous World



## FEATURE COLUMN: the World Congress

Congress or ICMP Travel Assistance.

7. After the Congress all awardees shall within two months each submit a short report to the IFMBE Secretary-General on what was accomplished personally and on behalf of the national organization, with copies to the same email addresses as the application was sent, including the national organization official.

### B. Evaluation Criteria

1. Quality and number of abstracts accepted for presentation at WC2015.

2. Engineers from resource-poor countries (where the applicant works) will be given higher priority.
3. Engineers in the first five years of their career may be given higher priority.
4. Value of attending WC2015 for applicant and national organization as judged by descriptions put forward by the applicant under the Motivation section. Applicant is an official of an IFMBE national organization or is designated the proxy of the official, or has been invited to give special presentations in WC2015 may be given special considerations.

For information about the WC2015 to be held in Toronto, Canada, please go to <http://www.WC2015.org>.

To submit an abstract, please go to <http://abstracts.webges.com/iupesm2015>.

## APPLICATION FORM FOR IFMBE TRAVEL ASSISTANCE PROGRAM 2015

Application form and a copy of the abstract(s) submitted to WC2015 congress website using the link provided above and must reach IFMBE Secretary General on or before February 15, 2015 by email:

[ifmbe@yahoo.com](mailto:ifmbe@yahoo.com)

### 1. APPLICANT:

First Name:

Surname:

Country of Residence:

City of Residence:

Country where the applicant works:

Address where the applicant works:



## FEATURE COLUMN: the World Congress

Telephone:

Email:

We will contact you using this address

Approximate round-trip airfare to Toronto in

USD: \$

Title of Presentation(s):

Motivation for attending the WC2015 (use a separate sheet if necessary)

Have you ever received previous World Congress Travel Assistance? Yes /No

Number of years working in Biomedical Engineering (excluding training years):

When did you first start working in Biomedical Engineering:

Signature of Applicant:

Date:

2. NATIONAL BIOMEDICAL ENGINEERING ASSOCIATION SECTION: to be completed by an officer

Name of IFMBE Member Organization:

Name of Officer:

Officer's position in the organization and

Address:

Telephone:

Email:

Have IFMBE membership dues been paid up to 2014? Yes / No

Is the Applicant a Biomedical Engineer? Yes / No

Signature of Officer:

Not necessary if Officer emails a copy directly

Date:

3. ABSTRACT(S) OF PRESENTATION(S) and NAME(S) OF FIRST AUTHOR(S):  
(Abstract should be in the format as specified by WC2015 and submitted online)

4. Please email the full paper accompanying the application before February 15, 2015  
Have you included the full paper(s) with the application? Yes / No