

# BIOELECTROMAGNETICS

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### 2008 MOST INFLUENTIAL JOURNAL AWARDS

*James C. Lin, Editor-in-Chief, Bioelectromagnetics*

It is my pleasure to announce the first awards of the Bioelectromagnetics Society's new Most Influential Bioelectromagnetics Journal Paper by Citation Award for an article published in Bioelectromagnetics during the past 5 years (e.g., 2003– 2007 for the 2008 evaluation cycle). Awards were presented by the Society's President Niels Kuster, during the Annual Scientific Meeting of the Bioelectromagnetics Society, held in Davos, Switzerland on June 14-19, 2009, to authors of the following three papers.

First Place: Haarala C, Björnberg L, Ek M, Laine M, Revonsuo A, Koivisto M, Hämäläinen H. Effect of a 902 MHz electromagnetic field emitted by mobile phones on human cognitive function: A replication study. *Bioelectromagnetics*. 2003 May; 24(4): 283-288.



Second Place: Mashevich M, Folkman D, Kesar A, Barbul A, Korenstein R, Jerby E, Avivi L. Exposure of human peripheral blood lymphocytes to electromagnetic fields associated with cellular phones leads to chromosomal instability. *Bioelectromagnetics*. 2003 Feb; 24(2): 82-90.

Third Place: Krause CM, Haarala C, Sillanmäki L, Koivisto M, Alanko K, Revonsuo A, Laine M, Hämäläinen H. Effects of electromagnetic field emitted by cellular phones on the EEG during an auditory memory task: a double blind replication study. *Bioelectromagnetics*. 2004 Jan; 25(1): 33-40

These papers were selected from among the primary research articles on recommendation of the Editorial Board of Bioelectromagnetics and approved by the Board of Directors of the Bioelectromagnetics Society. In addition to the certificate, the recipients of the First Place Award also received a monetary prize. Our sincere congratulations to these authors for their scientific and scholarly accomplishments.

### PRESIDENT'S COLUMN: REFLECTION ON THE PAST PROVIDES A PATH FOR THE FUTURE

*Niels Kuster, outgoing BEMS president*

As your outgoing president, I want to thank you for the privilege of allowing me to chair the Society this past year. To the best of my ability, I have sought to initiate together with the Board new strategies that will prepare the Society for the changing needs of its members and external conditions. I have also tried to provoke vital discussions about the future direction of the Society in my President's Column. Of course there are those who do not agree with me, but I have tried to offer my view on the values and principles that formed our Society and that have bound us together for all of these years.



There were six agendas that I sought to move during the past year:

- 1) to initiate and implement the Best Bioelectromagnetics Journal Paper Award and the Most Influential Bioelectromagnetics Journal Paper by Citation Award,
- 2) to initiate a dynamic planning effort to insure the future viability of the Society,

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**PRESIDENTS COLUMN**, *continued from page 1*

3) to initiate and test several new organizational tactics to improve our annual meeting

4) to develop effective strategic relationships and collaborative initiatives with other scientific societies, educational institutions, etc.,

5) to allocate additional time and meetings for the Board of Directors to discuss pressing issues facing the Society at the Winter Workshop and in additional web meetings and

6) to openly communicate with our members through the newsletter on issues, problems and opinions about our Society and the field of bioelectromagnetics.

My overall message was that it is important that we implement these agendas and posture ourselves in such a way that we are continuously recognized as the premier international society on bioelectromagnetics and its allied fields.

Since Bioelectromagnetics [journal] remains the primary vehicle to disseminate bioelectromagnetic research results, the Board initiated and approved the implementation of two new awards, the Best Bioelectromagnetics Journal Paper Award and the Most Influential Bioelectromagnetics Journal Paper by Citation Award, to attract more high quality submissions from those in the field and in related fields and to increase its impact factor. The first ever awards [for most influential paper by citation] were presented at BioEM2009 (see front page of this newsletter for list of winners) with the hope that the journal will reach a larger audience across multiple disciplines and interests.

The second important contribution made during this past year was our focus on identifying and serving the evolving needs of the Society as well as the needs of the field of bioelectromagnetics. With declining membership, annual meeting attendance and worldwide funding in bioelectromagnetics, and increasing management costs, we had to start building a consensus on changing environmental conditions that may require dynamic new initiatives and strategies to insure the future viability of the Society. In doing so, the Long Range Planning Committee was expanded this year to also include members from EBEA and emerging societies, such as BEMS China. Various recommendations for changing the Society's structure and management were proposed, all of which will be published [when they are made available]. Our incoming president, Michael Murphy, has already formed a new committee to expand and act on these recommendations.

Several new organizational tactics were implemented and tested [at] this year's annual meeting. Before preparations begin for the next annual meeting in Seoul, we should reflect on the changes made at this year's meeting and weigh their advantages and disadvantages.

Changes [at] this year's meeting included:

1) significant involvement of the Local Chair in organizing the meeting, potentially substantially reducing the management costs and increasing the local aspects of the meeting,

2) the inclusion of a 100-word abstract summary, graphical representation of the program and blank pages for notes in the program book,

3) a comprehensive meeting website with regular e-mail communication announcing website updates, an interactive online program with links to the full abstracts instead of CDs,

4) free internet service,

5) an eco-friendly approach, i.e., no bags, CDs, etc,

6) introduction of new types of sessions, such as Topic in Focus and Special Sessions, and

7) longer discussion times during most sessions.

Over the next few months, we will assess the responses to the meeting survey and discuss how we can further improve the annual meetings scientifically and socially.

With decreasing interest and funding for risk assessment related research, declining participation of interest groups and declining membership, it has become essential to develop effective strategic relationships and collaborative initiatives with other scientific societies, educational institutions, etc. with mutual interests. The multidisciplinary nature of bioelectromagnetics affords us the opportunity to find new ways to further develop the strengths of BEMS by broadening the scope of research topics at the annual meeting and to attract a high level of expertise from various scientific fields and backgrounds. Expanding on the efforts of Past President Ewa Czerska, first steps were taken this year at the Annual Meeting of the Society for Thermal Medicine (STM), where it was decided that both societies will organize one session at each other's annual meetings next year and further collaborations will be discussed on a continuous basis. In

*See Presidents Column, continued on page 3*

## PRESIDENTS COLUMN, *continued from page 2*

addition, talks with the European Society for Hyperthermic Oncology (ESHO) were initiated. We should continue to adopt a multidisciplinary perspective for sustained growth and increased interest in the activities of our Society.

With only three regularly scheduled board meetings (two during the annual meeting and one winter board meeting) throughout the year, there is generally insufficient time to thoroughly discuss and resolve the numerous pressing issues facing the Society. In lieu of a Winter Workshop this year, the Board of Directors Meeting was combined with a lab visit, allowing more time for important discussions about current bioelectromagnetic research and about open issues within the Society. An additional web meeting was held in late March. It was recommended to follow this structure in the future as it provides substantial savings for the Society, allows for an intimate and focused tour of the host lab and provides more time for the board members to discuss important issues. Another proposed option is to discontinue these meetings and instead, organize more WebEx meetings to maintain direct communication.

The newsletter is an important means of communication between the members of our Society during the year. As president, you have the opportunity to express your ideas and beliefs in a way that has authority, precision, and can be heard across the board. The President's Column was an essential way for me to voice my opinions and to openly address pressing issues and problems facing our Society and the field of bioelectromagnetics as your elected leader. Although not everyone will agree with the views of the President, I think it is necessary for the future presidents to open the door to dialogue with our members through their newsletter column on a regular basis. In turn, members are encouraged to respond more to these articles to let us know what you are thinking and what you need. We should remain proactive and responsive to each other between the annual meetings.

BEMS presidents come and go, but the society itself continues, evolves and improves. The president may be the spokesperson for the society for a year, but he or she alone does not establish its direction—that course is set by the members, the elected Board members and those who have gone before. I urge all of you to work with our incoming President, Michael Murphy, as we continue to build a stronger society to ensure that we, the scientists and researchers in the field of bioelectromagnetics, always have a forum to disseminate our research results, to express our views, to discuss our differences and to nurture the next generation of researchers in bioelectromagnetics.

## SUCCESSFUL MEETING IN DAVOS



The joint meeting of the Bioelectromagnetics Society with the European Bioelectromagnetics Association, held June 14 – 19, 2009 in Davos, Switzerland, was a big success. Registered meeting participants received roundtrip rail tickets to transport them from anywhere in Switzerland to Davos. The scenery was spectacular. During the first day of the meeting, Davos was also filled with cycling enthusiasts as the Tour de Suisse shared the roads with meeting attendees.

Within the Congress Centre, there was much to hold the attention and interest of meeting participants. Davos Mayor Hans Peter Michel, shown here with BEMS president Niels Kuster and EBEA president Carmela Marino, welcomed participants to the meeting.



Almost 500 people attended the meeting (presentation and poster abstracts available at [www.bioem2009.org](http://www.bioem2009.org)), filling both presentation rooms and poster halls.



The social event, held Tuesday evening, is described separately in this newsletter as it contained many elements of what president Niels Kuster calls “Swissness” that require further explanation. BEMS election results were also announced (see article in this newsletter).

*See Davos Meeting, continued on page 4*

## DAVOS MEETING, *continued from page 3*

On Thursday, at the annual meeting for BEMS, president Niels Kuster expressed the society's appreciation to technical program committee co-chairs Dariusz Leszczynski and Gugilelmo D'Inzeo for putting together a strong program for this meeting.



Niels Kuster concluded the BEMS Annual Meeting with the traditional handing over of the gavel with incoming president Michael Murphy.



The final session of the meeting, held on Friday, was the Hot Topic Plenary: When Do We Know Enough To Stop Research on the Safety of Wireless Communications? As seen below, chair Niels

Kuster and speakers Christopher Portier, Joe Morrissey, Luis Mir, Dariusz Leszczynski, and Debra Davis (not shown) reminded us of the widely varying points of view on this question.



Next year's meeting in Seoul, South Korea promises to continue the many discussions begun in Davos. A survey was sent to all members after the meeting to determine what went well and what changes members would like to see in future meetings. Co-chairs

Dariusz Leszczynski and Nam Kim will be carefully looking at survey responses as they design that meeting.

## BERNARD VEYRET'S SPEECH CELEBRATING EBEA'S 20TH ANNIVERSARY

*Editor's note: To celebrate the twentieth anniversary of the founding of the European Bioelectromagnetics Association in December 1989, Bernard Veyret gave the following address at the social event of the recent joint meeting with BEMS in Davos, Switzerland)*

Dear Friends,

Let me tell you the story of my tribe. It is also the story of global warming between the tribes.

The name of my tribe is EBEA. I am one of its elders and its leader goes by the name of Carmela [Marino].

In the beginning, that is 20 . . . thousands of years ago, there was a group of 5 hunters who started this new tribe. I was among them.



*Editor's note: Shown in this photo from 1989: Alejandro Ubeda (Spain), Alessandro Chiabrera (Italy), Jocelyn Leal (Spain), Richard Dixey (UK), Bernard Veyret (France). Note that Maurice Hinsenkamp (Belgium), not Alejandro Ubeda, is the fifth co-signer of the EBEA charter.*

One of us left the tribe, and our wise man, my friend Alessandro [Chiabrera] passed away: there are diseases that we still cannot heal . . . even using invisible waves.

A thousand years later, my tribe became known as EBEA. It originated in the territory of Europe.

This was the ancient times, before the cell phone, when there were no EMFs, that is ElectroMagnetic Fears, when we used to talk to each other face to face, and when the people of the Italian tribes could use their two hands to talk.

The leader of our new tribe is called Jocelyne [Leal]. She

*See Veyret's Speech, continued on page 5*

## VEYRET'S SPEECH, *continued from page 4*

lives in Iberia and we miss her tonight, as she did not want to make this long journey to the Helvetian mountains, using the big birds of Iberia, because she wanted to save money and flight global warming.

In the early days of the EBEA tribe, I travelled with Jocelyne to meet with the other older tribe, named BEMS. This encounter took place long ago in a big village called Stockholm in the very far north. The encounter between the two tribes was not very peaceful. Jocelyne was scared that these tall men from the Americas might take our money, and I did not want them to steal our women!

There was a lot of screaming and tears at this gathering, but we survived: you had to be tough at the time. We thus never became a vassal tribe . . . and now we share a journal.

Since then, we have made peace and organized common gatherings such as the one in Dublin, in the land of the black beer, and this one in Davos.

The two tribes still fight each other at times but we have left our sharp stone weapons at home and we now use a new soft and round weapon which we call the microphone. Soon we may be using the nanophone . . .

I won't be with you all on Friday for the hot topic session. It is too hot for me, and I need the 12-hour train journey back to my cave [in Bordeaux] to write my new book. Its title won't be "why I ate my father"\* nor "are EMFs helping us prevent global warming" but rather "how I ran away from the dinosaurs" because the big news is that the EMF dinosaurs are back . . . and they could become an internal threat to our tribes! A few of them have made it all the way to Davos. Please shut me up before I become one of these dinosaurs.

But before you do shut me up, I want to thank the local Helvetian tribe for organizing this underground gathering in their huge cave known as the Davos Congress Centre. This tribe is best known as the "men in black." Its charismatic leader, known by the name of Niels [Kuster], is a wise man. He is living proof of both evolution and global warming, as he does not need much fur on top of his head. This might be why he has a thousand new ideas per minute!

However, in the advent of global warming, he should know better and start clothing his tribe with white fur. . . He had the wise idea to gather us high up in the mountains.

I live in Bordeaux which is only 140 metres above sea level. This means that my tribe, EBEA, will be able to organize there some of our next gatherings in the next few thousands of years before the tide reaches us.

Long life to our two tribes!



*Editor's note: in this photo from 2009 are Paolo Vecchia, Fernando Bersani, Bernard Veyret, Yngve Hamnerius, EBEA President Carmela Marino, and Maurice Hinsenkamp)*

\* Roy Lewis, published 15, 000 years ago [Pourquoi j'ai mangé mon père (translation: Why I Ate My Father), 1960, Roy Lewis, Vintage Contemporaries Press.]

### **EBEA COUNCIL BEGINNING AUGUST 2009**

#### **President**

**Dr. Carmela MARINO (Italy)**

#### **Vice-President**

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**Dr. Gunhild OFTEDAL (Norway)**

**Eric VAN RONGEN (Netherlands)**

## SOCIAL EVENT AT DAVOS MEETING HELD AT SCHATZALP

Niels Kuster, Janie Page

Local culinary and musical treasures highlighted the social event of the joint meeting of the BEMS and EBEA (European Bioelectromagnetics Association) in Davos, Switzerland June 14-19, 2009. It was held at the Schatzalp, a hotel and restaurant located 300 meters above Davos just above the tree line. Schatzalp is well-known from the Thomas Mann's novel "The Magic Mountain". Attendees reached the location via a short (four minutes) ride on a funicular from the center of Davos or by hiking up from the conference center.



Following speeches by presidents of both the BEMS and EBEA societies, awards were presented to thank sponsoring agencies. Next, Bernard Veyret gave short oration highlighting the twentieth anniversary of EBEA. It is reprinted in this issue of the newsletter.

Due to the weather, members then went inside the Schatzalp to enjoy a menu featuring local delicacies, including carpaccio of dried Grisons meat (Grisons refers to the canton in which Davos is situated), hay soup, braised beef with pizokels, and wild berries in a sour cream pudding.



The social event at the Schatzalp entertained guests with music spanning a wide musical range from rock-n-roll to yodeling with bells.

### Appenzeller-Chläuse

As part of the festivities, participants were treated to a special performance by the Silvesterchläuse. This group presented part of an old custom in the village of Urnäsch in the canton of Appenzell Auser Rhoden (hinterland) in which



masked performers who go from house to house in small groups called 'Schuppeln' with big cow bells, masks, ornate headdresses and costumes yodeling wordless songs called 'Zauren' to wish the families blessings and happiness and to drive away evil spirits. Although the

masks represent both men and women, this is a purely male custom. There are three types of Chläuse: the ugly ones, the beautiful ones and the woodland and nature ones. They sing the so-called Zäuerli of Appenzell or improvised, polyphonic yodels without words. A solo singer often starts a slow natural yodel, while the others search for a corresponding tone, which they sing or hum like a bourdon to accompany the melody.

The origin and meaning of this ancient custom are the subject of speculation, because few written documents exist. The Chläuse are probably based on a demon cult that apparently merged with vegetation and fertility cults near Urnäsch. They typically perform only on January 13, the old Silvester (New Year's Eve according to the old Julian calendar). Old New Year's Eve, January 13, can be traced back to a conflict about the calendar that broke out in the 16th century, when Pope Gregory II improved the Julian calendar by moving New Year's Eve ahead thirteen days. The Protestants of Auser Rhoden were not willing to acknowledge the Pope's ideas and refused to give up the old calendar.

Ringling their bells and yodeling, the Chläuse wish everyone happiness and prosperity for the New Year, but perhaps a fruitful and stimulating meeting in our case.

### Tin Soldiers

Before and after dinner, the Tin Soldiers brought down the Schatzalp until 1am with all the energy and excitement of a live open-air rock concert. Five charismatic young men, including one of IT'IS' very own, Jonathan Gubler who works part-time as a graphic designer, constructed nothing less than a dynamic act with a lush mix of energetic and soulful songs that spanned the last 50 years from Otis Redding to Willie Nelson to the Verve. Their vast experience, natural talent and obvious camaraderie made for a festive and light-hearted evening. After putting

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## SOCIAL EVENT, *continued from page 6*

on their best moves for this rockin' band, the somewhat bleary-eyed BEMS and EBEA partygoers were left with an extra spring in their steps for the rest of the meeting.



Renato Frischknecht ~ lead vocals  
Jonathan Gubler ~ guitar & vocals  
Raffael Meyer ~ guitar  
Clemens Schepperle ~ bass & vocals  
Sandro Erne ~ drums

For more information about the band, please visit <http://www.tinsoldiers.ch/>

## 2009 STUDENT AWARDS TO BE FEATURED IN NEXT NEWSLETTER



*Back row: Guglielmo D'Inzeo (Technical Program Co-Chair), Students Christian Beyer, Patrizia Frei, Manuel Murbach, Marie-Christine Gosselin, Michael Corbacio, and (Technical Program Co-Chair) Dariusz Leszczynski.*

*Front row: Isabelle Lagroye (EBEA Student Awards co-chair), EBEA President Carmela Marino, BEMS President Niels Kuster, Jeff Carson (BEMS Student Awards co-chair)*

## BIOELECTROMAGNETICS JOURNAL EDITORIAL BOARD MEETS IN DAVOS



Back row: Kjell Mansson Mild, Associate Editor Andrew Wood, Joachim Schutz, Associate Editor Dariusz Leszczynski, Associate Editor Andrei Pakhomov. Front row: Associate Editor Junji Miyakoshi, Fernando Bersani, Shoogo Ueno, Associate Editor Carmela Marino, Editor-in-Chief James Lin, Maria Feychting, Niels Kuster, Maila Hietanen, Richard Nuccitelli, Indira Chatterjee, Associate Editor Ron Seaman, Ben Greenebaum, and Marvin Ziskin.

## NOTE TO CONTRIBUTORS

The Bioelectromagnetics Society newsletter is published and distributed to all members of the Society. Institutions and libraries may subscribe to the newsletter at an annual cost of \$85USD.

The newsletter serves as a forum for ideas and discussion of issues related to bioelectromagnetics research. Contributions may include news items, meeting reports, short notes on research, book reviews, and relevant items of historical or other interest. All submissions must be signed. While it is understood that contributions by individual authors reflect the views of the contributor, the editors may require that contributing writers submit a statement of affiliation and/or disclosure of possible conflict of interest at the time an article is submitted for consideration. Advertisements included in the newsletter are not to be considered endorsed by the Society.

To submit items for the newsletter, please send electronic files to **[bemsnewsletter@gmail.com](mailto:bemsnewsletter@gmail.com)** or **[bemsoffice@aol.com](mailto:bemsoffice@aol.com)** or (by surface mail) to:

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[www.bioelectromagnetics.org](http://www.bioelectromagnetics.org)

## BEMS BOARD ELECTION 2009

The 2008-2009 BEMS Board of Directors met prior to the start of the Davos meeting then posed for this picture.



Back row: Jeff Carson, Indira Chatterjee, Carl Blackman, Ann Rajnicek, Andrei Pakhomov, David Black, Gloria Parsley, Joachim Schuz, Chiyoji Ohkubo, Maren Federowitz, Nam Kim

Front row: Art Thansandote, James Lin, Michael Murphy, Niels Kuster, Vijayalaxmi, Phillip Chadwick, Janie Page

At the Annual Business Meeting, held Thursday, June 18, 2009, outgoing president Niels Kuster and incoming president Mike Murphy gave thanks to retiring board members Ewa Czarska (past president), Joachim Schuz, Jeff Carson, Dariusz Leszczynski, and Nam Kim after announcing election results:



Newly elected Vice President JEFFREY J.L. CARSON completed his graduate work in Medical Biophysics at the University of Western Ontario in 1995. He published his earliest work on the use of optical methods to observe calcium levels inside cells after exposure to magnetic fields during MRI. He then designed an optical spectroscopy system to enable real-time measurements of these effects.

For this work he was awarded the Curtis Carl Johnson Memorial Award by the Bioelectromagnetics Society for best platform presentation by a student twice and best poster presentation by a student once. Perhaps it was this experience that subsequently qualified him to lead the student awards programs during his most recent service as a board member (Biological and Medical Sciences) for BEMS.

Jeff also received more than a dozen academic awards during his training. After his PhD, he spent five years as a post-doctoral fellow at Stanford University in the Department of Radiation Oncology under the supervision of Dr. Jan Walleczek, who is internationally recognized as a pioneer in combining concepts from magnetochemistry and nonlinear dynamics. During this time, Dr. Carson studied the involvement of radical pair chemistry in the

magnetic effect on the oscillating peroxidase-oxidase enzyme system. He constructed an optical spectroscopy system to examine the response of the enzyme in real-time during exposure to light and magnetic fields. From 2001 to 2003, he worked as a Research Associate at Stanford University Medical Center. In 2003, he moved to the Lawson Health Research Institute in London, Canada, which is home to the largest bioelectromagnetics research group in Canada. He serves as a Scientist at the Lawson and as an Assistant Professor in the Department of Medical Biophysics at the University of Western Ontario.

Combined, he has authored over 80 journal articles, proceedings articles, conference abstracts, book chapters, and reports. He has mentored more than a dozen graduate and undergraduate trainees. His current research focus is on the development of real-time optical spectroscopy and imaging methods for studying the effect of magnetic fields on biochemical reactions, cells, and animals.



Treasurer-elect Philip Chadwick was awarded a Bachelor's Degree with Honors in Physics from the University of Leeds, UK, in 1984. His PhD, awarded by the University of Wales in 1991, was in the assessment of human body composition using magnetic induction. He has worked in the assessment of exposure of people to

electromagnetic fields for over twenty years, spending eleven years at the UK's National Radiological Protection Board, specialising in exposure assessment and dosimetry, and four years in the Department of Health's Radiation Unit working on EMF public health policy. He is currently Director of EMFields Ltd, an independent scientific research and consultancy organisation based in the UK, specialising in the interaction of electromagnetic fields with people. EMFields undertakes a wide range of work for the European Union, the UK Government, schools, Local Authorities and businesses around the world as well as having its own scientific research programme. He is also Technical Director of MCL Technology Ltd, a company manufacturing products and systems for RF exposure assessment.

Philip Chadwick is Chair of the European EMF standards committee CENELEC TC106X, and a member of numerous other CENELEC and IEC subcommittees. He

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## BEMS ELECTION, *continued from page 8*

is also an ICNIRP Consulting Expert and a member of the IEEE/ICES SC4 RF human exposure standards committee. He is Co-chair of the IEEE/ICES SC3 subcommittee responsible for the IEEE standard on human exposure to low-frequency fields.

He is a Member of the IEEE, a Member of the Institute of Physics and a Chartered Physicist.

Philip Chadwick is currently Secretary of the Bioelectromagnetics Society, and is keen to continue the work already begun by this year's Board to align the Society and its finances with the realities of the current economic situation, and to provide it with a secure basis for the future.



First of two new Biological and Medical Sciences board members, Maria Rosaria Scarfi is Senior Scientist since 2001 at the Institute for Electromagnetic Sensing of the Environment (IREA) of the C.N.R. in Naples, Italy, and is responsible for the Bioelectromagnetic Research Unit. From 1984 to 2001 she was research scientist and responsible for the research

“Biological effects of electromagnetic fields”.

She received the degree in Biological Sciences from the University of Naples in 1981.

She was visiting scientist at the Western General Hospital of the Medical Research Council in Edinburgh, (Scotland), hosted by the Clinical and Population Cytogenetics Unit, working at a research project on the cytokinesis-block micronucleus technique on human lymphocytes in 1987-1988. In 2005 she was co-director of the Course “Genotoxic effects of Electromagnetic Fields”, of the International School of Bioelectromagnetics “Alessandro Chiabrera” of the Foundation and Centre for Scientific Culture E. Majorana, Erice.

Her research activity concerns the evaluation of in vitro effects induced by exposure to electromagnetic fields, from extremely low frequencies to millimeter waves. In particular, her work focuses on the evaluation of genotoxic effects, effects related to non-genotoxic carcinogenesis (apoptosis and oxidative stress) and cell proliferation;

effects on the activity, stability and renaturation of mesophylic and thermophilic enzymes. On this topic she is author or co-author of more than 60 papers published in international journals and has been responsible for national and international research projects. She is member of the European Bioelectromagnetics Association (EBEA), of the Bioelectromagnetic Society, of the Italian Society for Environmental Mutagenesis and is a consulting expert of the International Committee on Non Ionising Radiation Protection (ICNIRP). Since 2001 she is member of the EBEA's board and has been involved in the Technical Program Committees of the meetings. She co-chaired sessions BEMS Cancun and Kanazawa annual meetings and at the XXIX URSI General Assembly (Chicago).

The other Biological and Medical Sciences board member, P. Thomas Vernier is Engineering Manager of MOSIS at the University of Southern California (USC) Information Sciences Institute and Research Associate Professor in the USC Ming Hsieh Department of Electrical Engineering.



Following undergraduate and graduate training in biology and chemistry at Wheaton College and the University of Michigan, and a diverse research and industrial career that includes ultraviolet microscopy analysis of S-adenosylmethionine metabolism in the yeast *Rhodotorula glutinis*, molecular biology of the temperature-sensitive host restriction of bacterial viruses in *Pseudomonas aeruginosa*, low-level environmental gas monitoring, wide-band magnetic tape instrumentation data recording, and semiconductor device modeling and electrical characterization, Tom returned to the academic world to earn his doctorate in electrical engineering from USC.

In his research since 2000, directed at identifying and understanding the molecular-level interactions between external electromagnetic fields and biological systems, he has concentrated on the effects of very short (nanosecond), intense (megavolt-per-meter) pulsed electric fields on cells and tissues, combining experimental observations with molecular dynamics simulations, and on the integration of devices based on cellular and biomolecular sensors, carbon nanotubes, and quantum dots with commercial integrated electronic circuit fabrication processes. Tom is a leading participant in a transformational outgrowth of this research that involves clinicians and biomedical

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## BEMS ELECTION, *continued from page 9*

and electrical engineers — an ongoing effort to develop nanoelectropulse therapies for cancer and other diseases.

Vernier is a member of the American Chemical Society, American Society for Microbiology, Bioelectrochemical Society, Bioelectromagnetics Society, Biophysical Society, Glen Helen Association, and Institute of Electrical and Electronics Engineers.



Representing Engineering and Physical Sciences, new board member Osamu Fujiwara received his B.E. degree in electronic engineering from Nagoya Institute of Technology, Nagoya, Japan, in 1971, and his M.E. and D.E. degrees in electrical engineering from

Nagoya University, Nagoya, Japan, in 1973 and in 1980, respectively. From 1973 to 1976, he worked in the Central Research Laboratory, Hitachi, Ltd., Kokubunji, Japan, where he was engaged in research and development of system packaging designs for computers. From 1980 to 1985, he was a Research Associate and Assistant Professor in the Department of Electrical Engineering at Nagoya University. In 1985, as an Associate Professor, he joined the Department of Electrical and Computer Engineering of Nagoya Institute of Technology. Since 1993, he has been a Professor in the Department of Computer Science and Engineering, Graduate School of Engineering, Nagoya Institute of Technology.

His research includes computational bioelectromagnetics, numerical dosimetry in human body and exposure assessment, in addition to the related area of electromagnetic compatibility (EMC). He has published over 120 papers in refereed scientific journals. He was Chairman of Tokyo Chapter of IEEE EMC Society in 2004 - 2006, IEEE Nagoya Section in 2005 - 2006, and IEEJ (Institute of Electrical Engineering of Japan) Technical Committee on EMC in 2002 - 2004. He serves as an Associate Editor of the IEEE EMC Transactions since 1992, an Associate Editor of the IEEE EMC Newsletter since 1998, and a member of International Advisory Board for Physics in Medicine and Biology since 2009.

Newly elected at-large board member Andrew W. Wood, MSc, PhD is Professor in the Brain Sciences Institute at Swinburne University of Technology in Melbourne, Australia and Research Director with the Australian Centre for Radiofrequency Bioeffects Research. After studying physics at Bristol University, UK, he earned a



PhD in biophysics from King's College Hospital Medical School, London, UK. At Swinburne, he has taught Medical Biophysics at both undergraduate and postgraduate level for over 30 years. He has supervised 11 successful PhD candidates. He has served as Non-ionizing Radiation representative on the Radiation Health Committee of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and chairs the ELF Standard Working Group. He acted as a temporary consultant to the WHO in Malaysia on NIR- related matters.

In relation to ELF and RF fields, Dr. Wood conducts laboratory studies both at the cellular level and with human volunteers. He also is involved in theoretical research into mechanisms of action of these fields on biological systems, particularly in relation to dosimetric aspects of standards setting. He has published over 70 articles in peer-reviewed journals. He is an Associate Editor of Bioelectromagnetics. Dr. Wood joined BEMS in 1991. He was on the Technical Program Committee for the Annual BEMS meeting in Maui in 2003.

## PIERS MEETING ANNOUNCED

Progress in Electromagnetic Research Symposium (PIERS) 2010 will be held on March 22 -26 , 2010 in Xi'an, China. BEMS member, C. K. Chou, notes that the end of March is a good time to be in Xi'an. The pre-registration fee for all participants now will be USD \$460. All the participants are required to register for the conference, and there is no financial subsistence provided for invitees.

As part of the International Advisory Committee, C. K. Chou organized a session on "RF Safety Issues" for 2010 . Each platform paper is allocated 20 minutes (including the time for questions from the audience), and each author is limited to presenting no more than three papers (including poster papers) at the Symposium.

The Call-for-Papers is available at <http://piers.mit.edu/piers/>. When you are ready to submit your paper(s), use the website [http://piers.mit.edu/piers2010xian/submit/submit\\_new.php](http://piers.mit.edu/piers2010xian/submit/submit_new.php). Under preferred topic area (item 4) select 27, or "Medical electromagnetics, RF biological effect, MRI", and under session information (item 5), select "RF Safety Issues organized by Chung-Kwang Chou". Please submit your abstract before the submission deadline, September 7, 2009.

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### TECHNICAL PROGRAM COMMITTEE (2010)

Dariusz Leszczynski and Nam Kim

**Research Reviews, a feature begun in the last BEMS Newsletter #207, will continue in the next issue of the BEMS Newsletter.**

## ADVANCES IN ELECTROMAGNETIC FIELDS IN LIVING SYSTEMS



BEMS member James Lin is the editor of a new book: *Advances in Electromagnetic Fields in Living Systems: Volume 5, Health Effects of Cell Phone Radiation* (Springer, 2009) presenting chapters written by “scientists who have made major contributions to this area of research.”

Further information is available at <http://springer.com/978-0-387-92733-6> or by calling 1-800-SPRINGER (1-800-777-4643).

## IN CASE YOU MISSED IT

A recent publication highlights a possible confounder in certain bioelectromagnetics related work:

“Background ELF magnetic fields in incubators: A factor of importance in cell culture work” K Hansson Mild, Jonna Wílén, Mats-Olof Mattsson, Myrtil Simko. *Cell Biology International* Volume 33, Issue 7, July 2009, Pages 755-757

The problem with high background magnetic field in cell incubators is still of current interest. We have recently measured the ELF B fields in some incubators in cell biology laboratories and we found values of the order of tens of  $\mu\text{T}$  which is in sharp contrast to the values found in our normal environment (0.05-0.1  $\mu\text{T}$ ). Since there are numerous examples of biological effects found after exposure to MF at these levels, such as changes in gene expression, blocked cell differentiation, inhibition of the effect of tamoxifen, effects on chick embryo development etc, we urge people working with cell culture incubators to check for the background magnetic field and take this into account in performing the experiments, since this may be one factor of importance contributing to the variability in the results from work with cell cultures.

For a reprint contact [kjell.hansson.mild@radfys.umu.se](mailto:kjell.hansson.mild@radfys.umu.se).

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## CALENDAR

### ISEE 2009

**Date:** 25-29 August 2009

**Location:** Dublin, Ireland

**Information:** [www.isee2009.ie/](http://www.isee2009.ie/)

### Progress in Electromagnetics Research Symposium (PIERS)

**Date:** 18-21 August 2009

**Location:** Moscow, Russia

**Information:** <http://piers.mit.edu/piers2k9Moscow/>

### Occupational Exposure to Electromagnetic Fields: Paving the Way for a Future EU Initiative

**Date:** 6-9 October 2009

**Location:** Umeå University, Umeå, Sweden

**Contact:** [kjell.hansson.mild@radfys.umu.se](mailto:kjell.hansson.mild@radfys.umu.se)

**Conference web site:** [www.av.se/occupEMF](http://www.av.se/occupEMF)

### Progress in Electromagnetic Research Symposium (PIERS)

**Date:** 22 -26 March 2010

**Location:** Xi'an, China

**Information:** see article in this issue

### Society for Thermal Medicine

**Date:** 23-26 April 2010

**Location:** Clearwater Beach, Florida

**Information:** [www.thermalmedicine.org](http://www.thermalmedicine.org)

### ESHO 26th Annual Meeting

**Date:** 20-22 May 2010

**Location:** Rotterdam, The Netherlands

**Information:** <http://www.esho.info/>

### 32nd Annual BEMS Meeting

**Date:** 13-18 June 2010

**Location:** Seoul KyoYuk MunHwa HoeKwan, South Korea

### Sixth International Workshop on EMF

**Location:** Bodrum, Turkey

**Dates:** 11-16 October 2010

**Contact/Information:**

[tunaya@istanbul.edu.tr](mailto:tunaya@istanbul.edu.tr) or [msmarkov@aol.com](mailto:msmarkov@aol.com)

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