

**The Bioelectromagnetics Society  
28<sup>th</sup> Annual Meeting**

**Technical Program & Registration**

**JW Marriott Cancun Resort & Spa  
Cancun, Mexico  
June 11 - 15, 2006**



**THE BIOELECTROMAGNETICS SOCIETY**

**2006-2007**

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## FROM THE CHAIR OF THE TECHNICAL PROGRAM COMMITTEE

The Bioelectromagnetics Society 28<sup>th</sup> Annual Meeting is being held once again in a beautiful location and the meeting promises to be an exciting look at current research in bioelectromagnetics around the world. The Technical Program Committee extends its welcome to authors, participants, family members and friends, to representatives of government and private agencies and to members of the press. We are confident that each and every attendee at the meeting will enjoy the four outstanding plenary lectures as well as in the papers that are presented in the fourteen platform sessions and in the two poster sessions.

The first speaker on Monday morning will be this year's D'Arsonval award winner, Dr. C.K. Chou, who will present the D'Arsonval lecture. Each morning, from Monday through Thursday, there will be plenary speakers who will give the audience an inside look at some of the cutting edge research in our field. The committee is also pleased to report that we reviewed 264 abstracts of which 50 were from students. These numbers are nearly identical to the meeting we held in Washington, DC (our last non-joint annual meeting) and they indicate a continuing high interest in bioelectromagnetics research.

Each year after the submission of abstracts, it is possible to get a glimpse of where research in this field is trending. This year, areas such as dosimetry, cell manipulation and medical applications are prime areas as measured by the number of papers submitted. Dosimetry studies far outnumbered all of the other categories with nearly 25% of the papers being in this category. The next largest group of papers was in cellular studies closely followed by papers in the pulsed high voltage area. Session 4 is made up of papers reporting on the exciting work being done with nano-second high voltage pulses and the potential they hold for inducing cancer cells to self destruct. The papers in this session are primarily from the ElectroMed group that has joined with BEMS this year. Session 7 contains papers that involve other applications of pulsed electric and magnetic fields. There are two sessions on medical applications with the first being primarily work at the lower frequencies and the second at higher frequencies.

As chair of the Technical Program Committee I would like to sincerely thank each member of the TPC as well as each member of the smaller pre-planning committee that helped me with the initial planning for the 28<sup>th</sup> Annual Meeting. This is the first meeting that was developed under the new Board of Directors guidelines (18 month advance planning, more Board involvement) and, I believe, the process has worked well. I would also like to thank Stefan Engstrom for creating the Web page that makes it so easy to do the abstract reviewing and session planning. Finally, it has been my pleasure to work with BEMS office staff as we constructed the technical meeting. They make it so much easier for the TPC chairman to keep track of and work out all the details of putting together this international meeting.

Once again, welcome to all those attending the meeting. I am sure this will be a highly informative and enjoyable meeting for all those in attendance.

*Bruce McLeod*

Technical Program Chair

TIME	BEMS 2006 ANNUAL MEETING SCHEDULE AT A GLANCE	LOCATION JW MARRIOTT
<b><u>FRIDAY, JUNE 9</u></b>		
9:00 – 5:00	IEEE/ICES/TC34/SC2 Meeting	Uxmal Room I & II
<b><u>SATURDAY, JUNE 10</u></b>		
9:00 – 5:00	IEEE/ICES/TC34/SC2 Meeting	Uxmal Room I & II
1:30 – 5:00	IEEE/TC95/SC4 Meeting	CasaMagna Maya Ballroom VI & VII
4:00 – 5:00	BEMS/EBEA 2009 Joint Meeting Planning Committee Meeting	Board Room I
<b><u>SUNDAY, JUNE 11</u></b>		
8:00 – 5:00	BEMS Board of Directors Meeting	Coba Room
9:00 – 12:00	<b>AEGIS CORPORATION MINI-SYMPOSIUM:</b> Scientific Issues in Nonlethal Interventions	CasaMagna Maya Ballroom IV
9:00 – 5:00	IEEE/ICES/TC34/SC2 Meeting	Uxmal Room I & II
9:00 – 12:00	IEEE/TC34 Parent Committee Meeting	Chichen Itza I & II
2:00 – 4:00	<b>US AIR FORCE WORKSHOP:</b> Research Effort on the Effects of Microwave Exposure on the Blood Brain Barrier	CasaMagna Maya Ballroom IV
1:00 – 7:00	Registration, poster setup	Tulum Grand Ballroom
3:00 – 5:00	<i>LOADING TIME FOR MONDAY PRESENTATIONS</i>	Palenque
5:00 – 7:00	WELCOME RECEPTION	Tulum Ballroom – Salon D & F
<b><u>MONDAY, JUNE 12</u></b>		
8:00 – 4:00	<i>LOADING TIME FOR TUESDAY PRESENTATIONS</i>	Palenque
8:00 – 8:15	Opening & Welcome	Tulum Ballroom – Salon D & E
8:15 – 9:00	<b>D'ARSONVAL AWARD LECTURE: C.K. CHOU</b>	Tulum Ballroom – Salon D & E
9:00 – 9:45	<b>PLENARY I: MEMBRANE DYNAMICS OF IMMUNE RECEPTORS IN CELL ADHESION AND COMPLEMENT REGULATION.</b> D. Golan	Tulum Ballroom – Salon D & E
9:45 – 10:15	<b>PLENARY POSTER SESSION INTRODUCTION</b>	Tulum Ballroom – Salon D & E
10:15 – 12:15	<b>POSTER SESSION A:</b> Authors of A posters need to be present at their poster	Tulum Ballroom – Salon A & F
12:15 – 1:15	Box Lunch included in paid registration	
1:15 – 3:15	<b>SESSION 1: RF IN-VIVO EFFECTS</b> <b>SESSION 2: DOSIMETRY I</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
3:45 – 5:45	<b>SESSION 3: EMF EXPOSURE &amp; STANDARDS</b> <b>SESSION 4: ELECTROMED SESSION I:</b> <b>EFFECTS OF NANO SECOND PULSED HIGH VOLTAGE</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
6:30	Editorial Board Dinner	Gustino Restaurant at JW Marriott

TIME	BEMS 2006 ANNUAL MEETING SCHEDULE AT A GLANCE	LOCATION JW MARRIOTT
<b><u>TUESDAY, JUNE 13</u></b>		
8:00 – 4:00	<i>LOADING TIME FOR WEDNESDAY PRESENTATIONS</i>	Palenque
8:00 – 9:00	<b>PLENARY II: ELECTROMED SESSION: NANOSECOND PULSED ELECTRIC FIELDS CAUSE MELANOMA TUMORS TO SELF-DESTRUCT.</b> R. Nuccitelli	Tulum Ballroom – Salon D & E
9:00 – 9:45	<b>PLENARY III: RESULTS FROM 10 YEARS OF WHO'S INTERNATIONAL EMF PROJECT.</b> M. Repacholi	Tulum Ballroom – Salon D & E
9:45 – 10:15	<b>PLENARY POSTER SESSION INTRODUCTION</b>	Tulum Ballroom – Salon D & E
10:15 – 12:15	<b>POSTER SESSION B:</b> Authors of B posters need to be present at their poster	Tulum Ballroom – Salon A & F
12:15 – 1:15	Box Lunch included in paid registration	
1:15 – 3:15	<b>SESSION 5: EXPOSURE STUDIES SESSION 6: MEDICAL I: HEALING</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
3:45 – 5:45	<b>SESSION 7: ELECTROMED SESSION II: PULSED ELECTRIC &amp; MAGNETIC FIELDS SESSION 8: MECHANISMS &amp; ANALYSIS</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
6:30	<b>SOCIAL EVENT</b>	
<b><u>WEDNESDAY, JUNE 14</u></b>		
8:00 – 4:00	<i>LOADING TIME FOR THURSDAY PRESENTATIONS</i>	Palenque
8:00 – 9:00	<b>PLENARY IV: ION CHANNEL CLUSTERING &amp; MYELOPEROXIDASE PARTICIPATE IN NEUTROPHIL RESPONSES TO WEAK ELECTRIC FIELDS.</b> H. Petty	Tulum Ballroom – Salon D & E
9:00 – 9:30	<b>PLENARY OPEN DISCUSSION</b>	Tulum Ballroom – Salon D & E
10:00 – 12:00	<b>SESSION 9: RF THRESHOLD RESPONSES SESSION 10: ELECTRO MANIPULATION</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
12:00 – 1:30	BEMS Annual Business Meeting - <i>Box Lunch available for purchase</i>	Tulum Ballroom – Salon D
1:45 – 3:45	<b>SESSION 11: IN-VITRO &amp; IN-VIVO RESEARCH SESSION 12: DOSIMETRY II</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
4:15 – 5:45	<b>MINI SYMPOSIUM: EMF RESEARCH AND THE PRECAUTIONARY PRINCIPLE</b>	Tulum Ballroom – Salon D
6:00	Posters must be removed before 6:00	Tulum Ballroom – Salon A & F
<b><u>THURSDAY, JUNE 15</u></b>		
8:00 – 8:45	<b>PLENARY V: MANIPULATION OF STEM CELL DIFFERENTIATION BY NONINVASIVE ELECTRICAL STIMULUS.</b> M. Cho	Tulum Ballroom – Salon D & E
8:45 – 9:30	<b>PLENARY OPEN DISCUSSION</b>	Tulum Ballroom – Salon D & E
10:00 – 12:00	<b>SESSION 13: MEASURED &amp; ESTIMATED THRESHOLDS FOR RESPONSE SESSION 14: MEDICAL II: HUMAN EXPOSURE RESEARCH</b>	Tulum Ballroom – Salon D Tulum Ballroom – Salon E
12:15	<b>Award Ceremony &amp; Closing Remarks</b>	Tulum Ballroom – Salon D
1:15 – 5:00	BEMS Board of Directors Meeting	Coba Room

## REGISTRATION INFORMATION

*Advanced registration is strongly recommended to take advantage of the discounted rates.*

### **DEADLINE FOR RECEIPT OF PAYMENT FOR ADVANCED REGISTRATION IS MAY 21, 2006**

Registrations received after that date will pay the late registration fee. Paid registration includes the following:

- Admission to all scientific sessions, including lectures and poster sessions;
- Conference documents including program, CD of abstracts and a list of participants;
- Welcome Reception on Sunday evening;
- Continental breakfasts Monday through Thursday;
- Daily coffee breaks during the Technical Program;
- Box lunches at Monday & Tuesday poster sessions; and
- Tuesday evening's Social Event

***Box lunches for Wednesday's BEMS Annual Business Meeting are available to purchase separately.***

Participants wishing to include guests at any of the meal functions must purchase their meals in advance.

### **28<sup>th</sup> ANNUAL MEETING REGISTRATION FEES**

	<u>Early/Discounted Before May 21, 2006</u>	<u>Late May 21, 2006</u>
Member	US \$495	US \$595
Non-Member	US \$595	US \$695
Student/Emeritus Member	US \$395	US \$295

### **REGISTRATION CANCELLATION POLICY**

Refunds are offered only for medical emergencies. There are no refunds for no shows.

### **TRAVEL ARRANGEMENTS**

Individuals are responsible for their own travel arrangements. We have no designated official airline carrier or agency for BEMS 2006.

## GENERAL INFORMATION

### MEETING LOCATION

The JW Marriott Cancun Resort & Spa in Cancun, Mexico, is currently undergoing renovations due to the damages sustained during hurricane Wilma. The reopening date is scheduled for May 15, 2006.

However, they are accepting reservations at the BEMS group rate of **\$150 per night** (plus 12% tax). The discounted BEMS rate is available for the nights of June 8<sup>th</sup> through June 18<sup>th</sup>, 2006.

You can make reservations for the BEMS discounted group rate by:

1. calling 1-888-813-2776 in the US or Canada and asking for the BEMS ANNUAL MEETING rate; or
2. visit: [www.jwmarriottcancun.com](http://www.jwmarriottcancun.com) and click on "Book a Reservation". This will take you to the reservation page where you will need to enter the group code **BEMBEMA** and the dates you would like to book. These dates must be within the approved group room block dates.
3. If you have any special requests you may fax the JW Marriott reservation department directly at: +52 998 848 965, ATTN: Mariangela Coppola.

***The cutoff date to obtain the BEMS discounted group rate (subject to availability) is May 21<sup>st</sup>, 2006.***

### VALUE ADDED TAX BENEFIT

Note that the Mexican Government offers a value-added tax benefit for foreign visitors. If you provide a copy of the migratory document you receive upon entering the country, along with a copy of your passport, the hotel can apply for an exemption of the 10% tax, reducing the total tax on your room to 2%. Upon check-in, either ask the front desk to make a copy, or check with the BEMS registration desk for help making copies. Payment must be made through a wire transfer from a foreign account to a Mexican bank or via a credit card issued abroad.

### MEALS

Registrants will receive complimentary:

- Welcome Reception on Sunday evening;
- Continental breakfasts and coffee breaks Monday through Thursday;
- Box lunches at Monday & Tuesday poster sessions; and
- Tuesday evening's Social Event

***If you would like to purchase a Box Lunch for Wednesday's Annual Business Meeting please do so in advance.***

### ABSTRACTS

The Twenty-Eighth Annual Meeting Abstract Collection will be available on the BEMS website two weeks prior to the Annual Meeting. Attendees may wish to download the Abstract Book and print out abstracts prior to attending the meeting.

Registrants will receive a CD with the Abstract Collection at registration.

**NEW THIS YEAR:** BEMS is offering an option to purchase a print copy of the Abstract Collection through early registration (\$50).

### STUDENTS

Through the generosity of our sponsors, BEMS will once again offer students the opportunity to apply for student travel support to attend the 28<sup>th</sup> Annual Meeting. To apply for travel support, please send an email or fax to the BEMS office with the criteria listed below:

1. To be eligible, the student must be a first author, present their paper at the meeting and be a member of the Society.
2. The student must submit a letter from their supervisor indicating the need for travel funds and validating that the student is in a graduate program.
3. The request must contain the title of the abstract.
4. The application for travel support must include:
  - the BEMS registration form with payment and
  - a copy of the airline ticket receipt.
5. The student must submit a current Curriculum Vitae (CV) and if not a current member must submit a membership application for membership (\$25) in BEMS.

The funds will be distributed in accordance with: grant funding conditions; the total number of student presenters that apply for travel support; and the funds available in the student travel budget.

We have reserved a discounted block of rooms at the CasaMagna Marriott Cancun Resort (connects to the JW Marriott). These rooms are strictly for our students who have applied for travel support to attend the annual meeting. You can make online reservations at: <http://marriott.com/property/propertypage/CUNMX> or call +52-998-881-2000.

### INSURANCE

Neither the Society nor Association Services International, Inc. is liable for personal injuries, loss or damage to private property for participants, students, accompanying persons either during or indirectly arising from BEMS 2006. Participants should make their own arrangements with respect to health, accident and travel insurance.

## **ANCILLARY EVENTS & ACTIVITIES**

### **FRIDAY, JUNE 9**

#### **IEEE/ICES/TC34/SC2 MEETING**

9:00am – 5:00pm; Uxmal Room I & II

### **SATURDAY, JUNE 10**

#### **IEEE/ICES/TC34/SC2 MEETING**

9:00am – 5:00pm; Uxmal Room I & II

#### **IEEE/TC95/SC4 MEETING**

1:30pm – 5:00pm; CasaMagna Maya Ballroom VI & VII

#### **BEMS/EBEA 2009 JOINT MEETING PLANNING COMMITTEE MEETING**

4:00pm – 5:00pm; Board Room I

### **SUNDAY, JUNE 11**

#### **BEMS BOARD OF DIRECTORS MEETING**

8:00am – 5:00pm; Coba Room

#### **AEGIS CORPORATION MINI-SYMPOSIUM: SCIENTIFIC ISSUES IN NONLETHAL INTERVENTIONS**

9:00am – 12:00pm; CasaMagna Maya Ballroom IV

#### **IEEE/ICES/TC34/SC2 MEETING**

9:00am – 5:00pm; Uxmal Room I & II

#### **IEEE/TC34 PARENT COMMITTEE MEETING**

9:00am – 12:00pm; Chichen Itza I & II

#### **US AIR FORCE LABORATORY WORKSHOP: RESEARCH EFFORT ON THE EFFECTS OF MICRO-WAVE EXPOSURE ON THE BLOOD-BRAIN BARRIER**

2:00pm – 4:00pm; CasaMagna Maya Ballroom IV

#### **REGISTRATION & POSTER SETUP**

1:00pm – 7:00pm; Tulum Grand Ballroom

#### **SPEAKER LOADING TIME**

3:00pm – 5:00pm; Palenque

#### **WELCOMING RECEPTION**

5:00pm – 7:00pm; Tulum Terrace

### **MONDAY, JUNE 12**

#### **EDITORIAL BOARD DINNER**

6:30pm; Gustino Restaurant at JW Marriott

### **TUESDAY, JUNE 13**

#### **SOCIAL EVENT**

6:30pm; TBD

### **WEDNESDAY, JUNE 14**

#### **BEMS ANNUAL BUSINESS MEETING**

12:00pm – 1:30pm; Tulum Ballroom – Salon D

*Box lunches are available for purchase in advance.*

### **THURSDAY, JUNE 15**

#### **BEMS AWARD CEREMONY**

12:00; Tulum Ballroom – Salon D

#### **BEMS BOARD OF DIRECTORS MEETING**

1:00pm – 5:00pm; Coba Room

### **PLATFORM (ORAL) SESSIONS**

Simultaneous sessions will be held in the Tulum Grand Ballroom at the times indicated in the Program schedule.

***The total time for each platform presentation is 10 minutes unless otherwise noted.***

Each session will have an LCD projector for computer presentations using Microsoft PowerPoint. Our meeting procedures require all presentations to be loaded onto the conference computer the day prior to presentation.

***Under no circumstances will presenters be allowed to use their own computers for presentation.***

Speakers who want to use computer projection must provide the AV technician with their presentation **the day before** their session, on either a CD ROM, USB memory stick or jump drive. Speaker's files will be deleted from the presentation computer at the conclusion of the meeting.

### **POSTER SESSIONS**

Poster setup is in the Tulum Salon A & F on Sunday, June 11<sup>th</sup> from 1:00pm to 7:00pm. Posters must be removed by Wednesday, June 14 at 6:00pm.

The boards will be numbered to correspond with the numbers assigned in the Program and student posters will be clearly identified. Authors are asked to be present at their poster on the day and time scheduled in the Program.

- Authors for Poster Session A should be present at their posters on Monday from 10:15am to 12:15am.
- Authors for Poster Session B should be present at their posters on Tuesday from 10:15am to 12:15am.

Authors must remove their posters by Wednesday, June 14 before 6:00pm. BEMS and Association Services International, Inc. are not responsible for damaged or lost poster materials.

**SUNDAY, JUNE 11**

**AEGIS CORPORATION  
MINI SYMPOSIUM**

**SCIENTIFIC ISSUES IN NONLETHAL INTERVENTIONS**  
9:00am – 12:00pm; CasaMagna Maya Ballroom IV

It is clear that the fledgling area of non lethal or intermediate force intervention involving electric fields and humans is a rapidly growing and important field. It is imperative that thorough research is conducted at this relatively early stage in order to understand the scientific issues that arise when a functioning biological system is subjected to high voltage, short duration pulses. Questions that are currently being considered include:

- What exactly is the full physiological response of the system after a single and multiple high voltage pulses?
- What is the importance of the shape of the pulse?
- Are there subtle long term effects on the biological system?
- Can effective in-silico models be developed that reliably predict the biological system reaction to the pulses?

These are just a few of the questions that will be addressed by the distinguished set of speakers that will present at the symposium. Those attending will have access to some of the latest research and thinking in the field and the discussion periods will be aimed at helping refine these current questions and to identify and clarify new questions that will form the basis for follow-on research. The symposium is intended to be not only a forum for the exchange of information but is also has the aim of helping set the agenda for long term research.

**US AIR FORCE LABORATORY  
WORKSHOP**

**RESEARCH EFFORT ON THE EFFECTS OF  
MICROWAVE EXPOSURE ON THE BLOOD-BRAIN  
BARRIER**  
2:00pm – 4:00pm; CasaMagna Maya Ballroom IV

The Air Force workshop will focus on the effects of 915 MHz radiation on the blood-brain barrier and neuronal viability. Results from a group of international studies that examined the effects of microwave energy on the blood-brain barrier and neuronal health will be presented. Over the past decade, numerous studies have been performed in this area, with varying results. These studies have used a number of different exposure and measurement techniques, however, and reviewing a group of such studies in a single session will provide an opportunity for further understanding of the exposure effects. Scientists interested in providing brief presentations during the Air Force Workshop should contact Dr. Jill McQuade (1-210-536-4046 or [jill.mcquade@brooks.af.mil](mailto:jill.mcquade@brooks.af.mil)).

**ELECTROMED SESSIONS**

**MONDAY, JUNE 12**

**ELECTROMED SESSION I: SESSION 4:  
EFFECTS OF NANO SECOND PULSED HIGH  
VOLTAGE**

3:45 – 5:45pm; Tulum Ballroom – Salon E

**TUESDAY, JUNE 13**

**ELECTROMED SESSION II: SESSION 7:  
PULSED ELECTRIC AND MAGNETIC FIELDS**

3:45 – 5:45pm; Tulum Ballroom – Salon D

**PLENARY SESSIONS**

**MONDAY, JUNE 12**

**D'ARSONVAL AWARD LECTURE: 35 YEARS IN  
BIOELECTROMAGNETIC RESEARCH**

**C.K. CHOU**

8:15 – 9:00am; Tulum Ballroom – Salon D & E

**PLENARY SESSION I: DAVID GOLAN**

Membrane dynamics of immune receptors in cell adhesion and complement regulation.

9:00 – 9:45am; Tulum Ballroom – Salon D & E

**TUESDAY, JUNE 13**

**PLENARY SESSION II: ELECTROMED  
SESSION: RICHARD NUCCITELLI**

Nanosecond pulsed electric fields cause melanoma tumors to self-destruct.

8:00 – 9:00am; Tulum Ballroom – Salon D & E

**PLENARY SESSION III: MICHAEL REPACHOLI**

Results from 10 years of WHO's International EMF Project.

9:00 – 9:45am; Tulum Ballroom – Salon D & E

**WEDNESDAY, JUNE 14**

**PLENARY SESSION IV: HOWARD PETTY**

Ion channel clustering & myeloperoxidase participate in neutrophil responses to weak electric fields.

8:00 – 9:00am; Tulum Ballroom – Salon D & E

**THURSDAY, JUNE 15**

**PLENARY SESSION V: MICHAEL CHO**

Manipulation of stem cell differentiation by noninvasive electrical stimulus.

8:00 – 8:45am; Tulum Ballroom – Salon D & E

## ACKNOWLEDGMENTS

The Bioelectromagnetics Society gratefully acknowledges the following organizations  
For their generous financial support for The Bioelectromagnetics Society's 28<sup>th</sup> Annual Meeting

### GOLD SPONSOR



### **Mobile Manufacturers Forum**

**Mobile Manufacturers Forum (MMF)** is an international association of radio equipment manufacturers whose members include: Alcatel, Ericsson, Mitsubishi Electric, Motorola, Nokia, Panasonic, Philips, Sagem, Samsung, Siemens, Sony Ericsson and TCL & Alcatel Mobile Phones.

The MMF's role is to support research, standards development and improved communications concerning wireless communications and health.

Michael Milligan is the Secretary General of the MMF and their website is available at: [www.mmfai.org](http://www.mmfai.org)

### SILVER SPONSORS



**Aegis Industries, Inc.**, is an emerging Intermediate Force Option<sup>®</sup> (IFO<sup>®</sup>) company focused on development of devices that are effective with acceptable Human Effects ensuring the safety of the public and operators. IFOs, commonly referred to as non-lethal weapons (NLW), are of great interest to the military and civilian sectors and are used increasingly around the world in peacekeeping missions. The Aegis philosophy is to innovate beyond current market products by designing devices that can be used to facilitate rapid transfer throughout the force continuum ranging from a "warning" to intermediate force to full engagement and final threat resolution. Key to the Aegis approach is simplicity, multi-functionality and compatibility with other NLWs including features for increased stand-off and effective crowd control. Aegis is located in Cambridge, MA.



**The Cellular Telecommunications & Internet Association (CTIA)** is the international organization representing over 150 wireless carriers, manufacturers of wireless phone equipment and developers and providers of wireless internet services. CTIA represents the wireless phone industry on all key public policies affecting the industry before the US Congress, the Federal Communications Commission, the US Food and Drug Administration, other federal regulatory agencies and the administration.



**The Electric Power Research Institute (EPRI)** was established in 1973 as an independent, non-profit center for electricity and environmental research. EPRI's collaborative science and technology portfolio now spans every aspect of power generation, delivery and end-use, drawing upon a world-class network of scientific, engineering and technical talent. EPRI's clients represent over 90% of the electricity generated in the US. International client participation represents over 10% of EPRI's program investment. Through the power of collaboration, EPRI is able to leverage the collective resources of its members to address the industry's toughest and most critical challenges related to generation, delivery and end-use, with a special focus on safe, reliable, cost-effective electricity and environmental stewardship. Robert Kavet, ScD, is the EMF Business Area Manager responsible for programs in EMF Health Assessment and Radiofrequency Safety.

## ACKNOWLEDGMENTS

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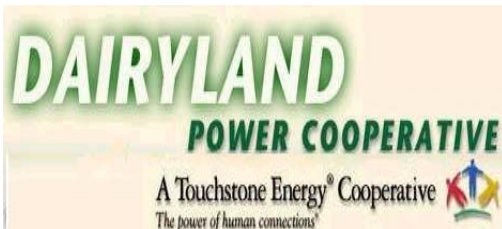
**The GSM Association (GSMA)** is the global trade association that represents the interests of more than 679 GSM mobile phone operators across 210 countries. In addition, more than 150 manufacturers and suppliers support the Association's initiatives as key partners. The primary goals of the GSMA are to ensure mobile phones and wireless services work globally and are easily accessible, enhancing their value to individual customers and national economies, while creating new business opportunities for operators and their suppliers. The Association's members serve more than 1.6 billion customers - 78% of the world's mobile phone users. Jack Rowley, Ph.D., is the Director Research & Sustainability.



**Nikken** is an international direct sales wellness technology company operating in more than 30 countries and recognized as a world leader in wellness technology since pioneering the concept in Japan in 1975. Since the launch of its first product, a shoe insert with magnets designed in cooperation with Japanese scientists studying magnetism, Nikken expanded in North America in 1989 and now offers wellness products in nutrition, skin care, fitness, rest and relaxation, and home environment. Nikken's innovative technologies incorporated into its products, surpass others on the market today. Some of these revolutionary innovations include EQL Magnetic

Technology, a patented magnetic design offering consistent magnetic coverage; Magnetic Biaxial Rotation, which produces a dynamic magnetic field with an angle of polarity constantly changing to create a three-dimensional effect; Far-Infrared Technology, using specially made, ceramic- reflective fibers that absorb energy and reflect that energy as warmth; Kenzen Wellness Technology, easy, convenient, simple whole-foods nutrition; PiMag Water Technology, which produces ionized pi water; and Air Wellness Technology, an unprecedented air purification system that uses five-layer, state-of-the-art filtration with no ozone output.

## BRONZE SPONSORS



**Dairyland Power Cooperative**, La Crosse, Wisconsin, provides the wholesale electrical requirements and other services for 25 electric distribution cooperatives and 20 municipal utilities. These cooperatives and municipals, in turn, supply the energy needs of more than half a million people. Dairyland Power Cooperative's mission is, as a cooperative organization, to provide competitively priced energy and services to our customers and maximum value to our owners, consistent with the wise use of

resources. Chuck Thompson, Project Manager, has been a member of BEMS since 1990.



EBI is a pioneering global leader in electro and biomechanical medicine and one of six strategic business units of Biomet, the fifth largest producer of orthopaedic products worldwide. EBI designs, develops, manufactures and markets products used primarily by orthopaedic medical specialists in both surgical and non-surgical therapy. We feature an unparalleled line of innovative electrical stimulation and external fixation devices, in addition to a comprehensive line of spinal and orthopaedic support products.

EBI is continually enhancing product development technologies through state-of-the-art research and development initiatives. Our extensive network of field representatives work in concert with headquarters support personnel to respond promptly to every physician and patient inquiry.

## ACKNOWLEDGMENTS

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For their generous financial support for The Bioelectromagnetics Society's 28<sup>th</sup> Annual Meeting



**Fralex Therapeutics, Inc.** is commercializing a breakthrough neuromodulation therapy, F-NMT. This proprietary technology utilizes a non-invasive device to deliver specifically designed, low-power pulseforms that moderate activity within targeted regions of the brain. It will have its first applications in the treatment of chronic pain, depression and anxiety.



**Ivivi Technologies, Inc.**, a subsidiary of ADM Tronics Unlimited, Inc. was founded to develop non-invasive electrotherapies for clinical applications. The company is focused on soft-tissue repair and regeneration, maintains a clinical Center of Excellence at a major medical school and conducts research with several academic programs. Visit us at [www.ivivitechnologies.com](http://www.ivivitechnologies.com).



**The Lawson Health Research Institute** (Lawson) in London, Ontario, Canada is the research arm of London Health Sciences Centre and St. Joseph's Health Care, London. Lawson is one of the largest hospital-based research institutes in Canada attracting \$50 million each year in research funding. More than 500 investigators throughout London investigate disease and ways to detect, prevent,

and treat illness. Dr. David Hill is Scientific Director and Dr. Joe Gilbert is its Chief Administrative Officer. For more information on Lawson, visit [www.lhrionhealth.ca](http://www.lhrionhealth.ca).



**ELFORSK** Svensk Energi/Swedenergy is a trade association responsible for safe-guarding the interests of its 180 member companies in the fields of electricity production, distribution and sales. **Elforsk AB** (The Swedish Electrical Utilities' R&D Company) became operative in 1993, its purpose being the rationalisation of joint industry R&D. Elforsk is owned by Svensk Energi/Swedenergy and Svenska Kraftnät (the power grid authorities).



**U.S. Air Force Research Laboratory, Radio Frequency Radiation Branch** in Brooks Air Force Base began in 1968 under the leadership of John C. Mitchell. Today it is one of the largest centers for the study of the effects of RFR on humans and their environment. Original research is conducted in the science of RFR dosimetry and RFR bioeffects. Quality research is promoted through the publication of the USAF RFR Dosimetry Handbook and support of the International EMF Dosimetry Project. International RFR standards development and harmonization are promoted by working with the IEEE and the World Health Organization. Lt. Col. William Roach is the Chief of the Radio Frequency Radiation Branch.



**WHO** is a specialized agency within the Charter of the United Nations and was established in 1948 "for the purpose of co-operation among themselves and with

others to promote the health of all people". As part of its charter to protect public health and in response to public concern over health effects of EMF exposure, the World Health Organization (WHO) established the International EMF Project in 1996 to assess the scientific evidence of possible health effects of EMF in the frequency range from 0 to 300 GHz. The EMF Project encourages focused research to fill important gaps in knowledge and to facilitate the development of internationally acceptable standards limiting EMF exposure.