

# BIOELECTROMAGNETICS

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### JAMES LIN IS NAMED EDITOR IN CHIEF OF *BIOELECTROMAGNETICS*



James Lin

James C. Lin, professor of bioengineering and electrical engineering at the University of Illinois-Chicago, has been chosen as the new Editor in Chief of *Bioelectromagnetics*, the Society's scientific journal.

A past president of the Society in 1994–1995, Lin was the 2003 winner of BEMS's most prestigious honor, the d'Arsonval Award, which recognizes extraordinary accomplishment in bioelectromagnetics.

An accomplished communicator of science, Lin has a long history with various scientific publications including the BEMS journal as a member of its first editorial board. He is currently the editor of the book series, "Advances in Electromagnetic Fields in Living Systems," and is also an editorial board member at *Microwave and Optical Technology Letters* and *The Microwave Journal*.

Lin writes a popular column on "wireless communication health and safety" appearing in four professional magazines, and has shared his expertise with the public on such topics as robotics, police radar and cell phones as a guest on radio talk shows in Chicago and the Midwest, on the Discovery Channel, and for the British Broadcasting Corporation. Lin's 1978 book, "Microwave Auditory Effects and Applications" was the first American contribution in its field, and another book he co-authored in 1987 with Michaelson, "Biological Effects and Health Implications of Radiofrequency Radiation," has become a classic.

BEMS President Stefan Engström said many good comments were received about Lin's qualifications to serve in the position by members of the Editor Search Committee, as well as people on the Inter-Society Relations Committee, the Journal Committee and the Publications Committee. "Support for Jim being the next editor of the Journal is unanimous," Engström commented, "and it is a pleasure to welcome him."

At the University of Illinois, Lin has served as head of the Bioengineering Department, Director of the Robotics and Automation Laboratory, and Director of Special Projects in the College of Engineering. He also held an appointment as the NSC Research Chair from 1993–1997. He is the author of more than 140 journal research papers overall, and author or editor of seven books.

See *Lin Named Editor in Chief*, continued, p2

### AN APPEAL FROM THE VICE PRESIDENT—WE NEED YOU!

Vice President/ President-Elect Ben Greenebaum recently issued a call to all members to consider joining one of the Society's standing committees, to continue BEMS' long and fertile tradition of active member participation in 2006–2007.



Ben Greenebaum

"The Board of Directors of the Bioelectromagnetics Society has a number of committees that help Directors, Officers and staff do their work and provide a channel for the broader membership

to express their views, and influence policy and procedures. Almost all of these committees function via e-mail and do not meet in person, and some are more active than others. The incoming President appoints members each summer," writes Greenebaum.

"Like Bruce McLeod last year, I would like to have a broad base of willing members who can help the Society run well and face some of the challenges that a shrinking funding base is posing.

See *An Appeal Continued*, p2

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## Lin Named Editor in Chief, Continued

Lin has made significant contributions to and provided leadership in advancing the understanding of biological interactions and medical applications of microwaves over the past 30 years, supporting human health and safety. Lin's research has provided not only a better understanding of biological responses but also a basis for setting exposure criteria. His work on the microwave hearing phenomenon, reviewed in detail by Lin at a public meeting in Berlin of the International Commission on NonIonizing Radiation Protection (ICNIRP)—a commission to which he was recently named—has been crucial to understanding the auditory perception of pulse-modulated microwaves. In particular, his experimental and analytical studies of the theory of microwave-induced thermoelastic tissue interaction have made the microwave hearing phenomenon one of the most well defined and best understood effects of pulse-modulated microwave radiation, he points out.

Lin also was an early developer of medical applications such as noninvasive and noncontact sensing of biological signatures to allow monitoring of vital signs and circulatory movements using microwave and cellular wireless technology. His work on microwave-induced blood-brain barrier permeability changes helped to define the interaction mechanism and threshold, and led to the combined microwave hyperthermia and chemotherapeutic treatment of brain cancer. Lin also is proud of pioneering the use of transcatheter microwave ablation technology for treatment of cardiac arrhythmia. His dosimetric studies on the biological interactions using canonical models in general, and award-winning work on pulsed and transient electromagnetic signals provided important information on ultra-wide-band bioelectromagnetics.

He also has made important contributions through such organizations as NCRP and IEEE, with the responsibility for analyzing potential health effects and setting occupational and public guidelines for exposure to electromagnetic fields. He is a Fellow of the American Association for the Advancement of Science, the American Institute for Medical and Biological Engineering and IEEE.

Lin has led or organized meetings for many scientific and professional groups, including not only BEMS's 25th Anniversary Meeting, but the URSI Commission on Electromagnetics in Biology and Medicine (chair), IEEE COMAR (chair) and the U.S. National Council on Radiation Protection and Measurements' SC 89-5, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields" (chair).

Lin began his higher education at Whitworth College in Spokane, Wash., and later received the BS, MS and PhD (1971) degrees in electrical engineering from the University of Washington, Seattle. He has been a professor of electrical engineering, bioengineering and physiology and biophysics at the University of Illinois-Chicago since 1980.

—Janet Lathrop, with University of Illinois-Chicago and other sources; photo courtesy of UIC

## President's Appeal, continued

I have listed below the standing committees of the Board. Would anyone who is interested in serving on one or more of these or who thinks of another person who would be good on a particular committee, please let me know your interest by e-mail or send me a note by snail mail. Thank you."

### BEMS Committees, 2006–2007

**Awards Committee.** Members consider d'Arsonval Award nominees; members that are present at the Annual Meeting act as judges of student presentations; includes recent past d'Arsonval recipients.

**Development Committee.** Members help to identify and solicit grants from government and industry, primarily to support the costs of the Annual Meeting but also for general Society support.

**Elections Committee.** Members oversee election and ballot tally—easier now that most ballots are electronic.

**Finance Committee.** Members assist the Treasurer with investment decisions and in thinking about overall financial health of the Society.

**History Committee.** Now mostly inactive, this ad hoc group was founded to oversee the BEMS History Booklet for the 25<sup>th</sup> anniversary; it could be revitalized.

**Inter-Society Affairs Committee.** The members of this committee are also members of other bioelectromagnetics societies and groups; the BEMS Committee members agree to be liaisons and report to BEMS Board on activities.

**Long-Range Planning Committee.** Members oversee updating Long-Range Plan of Society about every 3 years—most recently in 2005—and monitors its implementation.

**Meeting Quality Committee.** Members consider how policy on and structure of Annual Meeting can be improved.

**Membership Committee.** Members evaluate applications, received electronically each month, for BEMS membership, and review requests by members to change membership category (except emeritus), for action by the Board.

**Memorial Committee.** Members oversee memorials at annual business meeting and on Web page, administer and award memorial funds, as well as any other recognitions for deceased members.

**Nominating Committee.** This committee is chaired ex-officio by immediate Past President; members nominate candidates for election to Society offices.

**Publications Committee.** Members recommend policies for the Society's publications (e.g., journal and newsletter) and electronic communication systems (e.g. Web site, e-mail and fax).

**Technical Program Committee.** The chair is appointed by the Board 2 years before the annual meeting for which this

*See President's Appeal Continued, p3*

## President's Appeal, continued

committee is named; members organize technical content of the annual meeting 18 months ahead.

### BEMS Committees appointed ex-officio:

**Journal Committee.** From BEMS, the immediate Past President and Publications Committee Chair serve. Other members serve from each Society affiliated with the journal. Members of this committee are consulted on editorial appointments and major policy shifts.

**Management Committee.** The BEMS President, immediate Past President, and Treasurer serve on this ex-officio committee to monitor the performance of the Society's management company and staff.

**Public Affairs Committee.** Ex-officio members are the 5 most immediate Past Presidents. They consider public actions to be taken or affecting the Society.

– Ben Greenebaum

*University of Wisconsin-Parkside*

*E-mail: greeneba@uwp.edu*

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## UENO ANNOUNCES RETIREMENT

A past president of the Society, Shoogo Ueno, until recently Professor and Chairman of the Department of Biomedical Engineering in the Graduate School of Medicine at the University of Tokyo, retired from that post on April 1.



*Shoogo Ueno*

He recently wrote to BEMS members, "Dear friends, I am happy to hear that you decided the BEMS meeting would be held in Kanazawa, Japan, June 2007. All of you are cordially welcome to Japan in 2007. By the way, I will retire from the university of Tokyo at the end of March 2006, and I will go back to Fukuoka as a Research Professor at the Graduate School of Engineering,

Kyushu University. The address and e-mail from April 1, 2006, are given below. I am asking my friends to send me e-mail message for my retirement. I will often enjoy reading them after retirement. You can also send to my old email in the University of Tokyo even after April.

With best wishes,

Professor Shoogo Ueno

Graduate School of Engineering

Kyushu University

Fukuoka, JAPAN

e-mail: ueno@athena.ap.kyushu-u.ac.jp

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## CORRECTION

There was an error in a story on page 3 of the last issue of the BEMS Newsletter, announcing the December 2005 triple issue of *The Environmentalist*, edited by BEMS member Marko Markov of Research International, Buffalo, New York. The special issue offers presentations from the International Workshop, "Biological Effects of Electromagnetic Fields," held in Kos, Greece, not in Rhodes. The BEMS Newsletter regrets this error and apologizes for any inconvenience it may have caused.

## EARLY BIOELECTROMAGNETICS MATERIALS AVAILABLE

Dr. Michael Marron, a past editor of the BEMS Newsletter, recently wrote to say that he has a few boxes of materials collected over the past 30 years in bioelectromagnetics research available to donate to someone who feels they could use the books and papers.

Marron, a physical chemist, collaborated with Ben Greenebaum at the University of Wisconsin early in his career, and later worked for the Office of Naval Research and more recently at the U.S. National Institutes of Health. Those interested in corresponding with Dr. Marron about the materials may write to him at: [mike@marron.org](mailto:mike@marron.org)

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## NOTE TO CONTRIBUTORS

To address possible conflict of interest and bias, the BEMS Newsletter requests that contributing writers submit a statement of affiliation and /or disclosing possible conflict of interest along with items they send to the Newsletter.

BEMS Newsletter Editor Mays Swicord is currently employed by Motorola, Ft. Lauderdale, Florida, and is a retired employee of the U.S. Food and Drug Administration.

BEMS Newsletter Managing Editor Janet Lathrop is a science writer in New Hampshire, USA. In addition to independent science writing, she regularly contributes EMF research news to a private information service funded by industry, non-profit groups and government.

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 \$58.50 (\$67.50 for overseas subscriptions). The newsletter serves the membership and subscribers in part as a forum of ideas and issues related to bioelectromagnetics research. All submission to the newsletter must be signed. It is understood that they reflect the views of individual authors and not those of the Society or the institutions with which the author may be affiliated. The editors welcome contributions to the newsletter from members and others in the scientific and engineering communities. News items as well as short research notes and book reviews are appreciated. Advertisements inserted or distributed with the newsletter are not to be considered endorsements.

To submit items for consideration, contact:

Dr. Mays Swicord, editor, Motorola Florida Research Laboratories, 8000 W. Sunrise Blvd., Ft. Lauderdale, FL 33322 USA. Tel. (954) 723-4898, FAX: (954) 723-5611. E-mail: [ems029@email.mot.com](mailto:ems029@email.mot.com)

or

Janet Lathrop, managing editor, 750 Cherry Valley Rd., Gilford, NH 03249. Tel and FAX: (603) 892-0649 USA. E-mail: [jlathrop@fcgnetworks.net](mailto:jlathrop@fcgnetworks.net)

For other Society business or information, contact: Gloria Parsley, executive director, The Bioelectromagnetics Society, 2412 Cobblestone Way, Frederick, MD 21702-2626 USA. Tel. (301) 663-4252; FAX: (301) 694-4948. Email: [bemsoffice@aol.com](mailto:bemsoffice@aol.com) or see the BEMS Web site: [www.bioelectromagnetics.org](http://www.bioelectromagnetics.org)

## AEGIS MINI SYMPOSIUM PLANNED IN CANCÚN: “SCIENTIFIC ISSUES IN NON LETHAL INTERVENTIONS”

On Sunday, June 11, 2006, from 9 a.m. to 12 noon, the Bioelectromagnetics Society and Aegis Corp., a Silver Level Sponsor of the BEMS Annual Meeting, will present a mini-symposium titled, “Scientific Issues in Non Lethal Interventions,” chaired by James Weaver of Massachusetts Institute of Technology, Cambridge, Mass. USA. The symposium precedes the opening of the 28th BEMS Annual Meeting at the JW Marriott Resort, Cancún, Mexico, beginning later that evening and continuing until Thursday, June 16.

As chair of the symposium, Weaver offers the following introduction to BEMS members who are considering participation in the symposium: “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?
- 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.

For further details on the BEMS 28th Annual Meeting visit: <http://www.bioelectromagnetics.org>

### Aegis Supports Student Travel Award to BEMS

AEGIS Corp., a Silver Sponsor of the BEMS Annual Meeting in Cancun, has generously donated \$10,000 this year to be used as a Student Travel Grant to support travel expenses for student presenters at the Annual Meeting. With offices in Cambridge, Mass., USA, Aegis is a manufacturer of radiation shields and laser products, and conducts ongoing research on Tasers and stun guns. Aegis President Ken Stethem and Science Officer Bruno Marino said the company is pleased to support student participation in the Annual Meeting, where academic education is enriched by the opportunity for professional and collegial interaction related to science and research, and where opportunities are enhanced. More information on Aegis is available at <http://www.goaegis.com>

## BEMS JOURNAL NOW HANDLING MANUSCRIPTS ON LINE

Recently the system for submitting manuscripts to Bioelectromagnetics was put into operation, according to Ben Greenebaum, Editor in Chief. For a limited time the editors will consider manuscripts submitted either through the on-line system or through the previous method of e-mail attachments, or the postal system. The parallel processes will soon be followed by the announcement of a date after which the journal will only consider manuscripts submitted on-line, except in what the Editor in Chief considers very extraordinary circumstances.

“The trial period will allow the Editors and their assistants to become more familiar with the system, which has been used with great success by many journals including a large number of the IEEE Transactions, and to fix any problems in the way it has been implemented for this journal,” Greenebaum explained in a recent editorial. For more information, see the journal’s updated “Instructions for Authors,” available at <http://www3.interscience.wiley.com/cgi-bin/jhome/34135>

Greenebaum also wrote that “as implemented for *Bioelectromagnetics* and its publisher, John Wiley & Sons, the Manuscript Central system uses only on-line electronic transmission, communication, and storage from the time the author submits the manuscript to when accepted papers have been through the typesetting and proofing system. In particular, on-line is how the editors receive manuscripts for consideration, send papers to and receive comments from reviewers, forward comments and receive revisions from authors, and edit and send accepted papers for publication. At each stage, the system sends e-mail notices to the appropriate person that the next stage of on-line information is ready for viewing. The new system saves time at every turn, not the least because it automatically sends more reminders to late reviewers or busy editors than our previous manual system, a feature that also decreases the chance of an occasional file being temporarily overlooked. Finally, it is expected eventually to save the Editors some time and effort and to bring some financial savings to both the publisher and the Society.

Ben Greenebaum, Editor in Chief  
University of Wisconsin – Parkside, Kenosha WI USA  
UW—Parkside, 900 Wood Rd., PO Box 2000,  
Kenosha WI 53141-2000  
E-mail: [greeneba@uwp.edu](mailto:greeneba@uwp.edu)

## SHOULD EMF BE PART OF U.S. NATIONAL OCCUPATIONAL RESEARCH AGENDA?

For the past few months, the U.S. National Institute of Occupational Safety and Health (NIOSH) has been collecting comments from the public, from labor unions, industry, academia, and other stakeholders, to help the federal government agency decide on its research priorities for the next 10 years. In April the process, known as NORA—the National Occupational Research Agenda—culminated with a symposium in Washington, D.C.

The conference will convene several hundred occupational safety and health researchers, policymakers from the public and private sectors and other stakeholders to salute the first decade of NORA and inaugurate the new plan for the next decade. An important aspect of this conference, according to the NIOSH call for participation, will be workshops that set scientific priorities for the next ten years. “The symposium will be a unique forum for a broad cross-section of the occupational safety and health community to learn about the variety of research accomplishments stimulated or anticipated by the NORA,” said NIOSH.

For the BEMS Newsletter, Dr. Joe Bowman of NIOSH’s Engineering and Physical Hazards Branch in Cincinnati, Ohio, USA, recalled that the first 10-year NORA cycle initiated in 1995 did not identify worker exposure to either power-frequency or radio-frequency (RF) EMF as a part of the official research agenda.

Without NORA funding, major EMF research projects at NIOSH were supported by the U.S. EMF RAPID program in the 1990s, and more recently, by collaborations with EPRI, the National Cancer Institute, and the International Agency for Research on Cancer (IARC), Lyon, France. The portion of IARC’s InterPhone Study which focuses on occupational EMF exposures, Bowman commented, is believed to be the largest study of workplace RF and cancer ever conducted.

Bowman hopes that both power-frequency and RF will be included in the second-round NORA priorities for NIOSH research. He wants EMF research to be recognized as part of the official, written agenda for the agency until 2016. Because NORA helps to guide internal research projects and encourages collaboration with unions, industry, national laboratories and other researchers and institutions, adding EMF in this round could bring some funding to EMF in an environment of scarce resources, Bowman notes. Perhaps even more significant would be identifying non-ionizing radiation as an important topic for human health effects research on a national level, he adds.

Bowman believes it is important for NIOSH to continue to be involved in EMF research “so that there will be experienced scientists in the U.S. government to interpret the literature and give advice on decisions about occupational EMF exposures.”

*See Should EMF Be Part of Research Agenda continued, p9*

## REGISTER NOW AND BOOK YOUR LODGING FOR BEMS 28TH ANNUAL MEETING IN CANCÚN!

The JW Marriott Cancun Resort and Spa in Cancún, Mexico, will be ready to host The Bioelectromagnetics Society’s 28th Annual Meeting on June 11–15, 2006, as planned, and it is to your advantage to register before May 21, when fees increase, as outlined in the table below.

### Registration Fee Schedule, BEMS 28th Annual Meeting

	<u>On or Before</u> <u>May 21, 2006</u>	<u>After May 22, 2006</u>
Member	\$495	\$595
Non-Member	\$595	\$695
Student/Emeritus	\$295	\$395

It is also recommended that you book lodging immediately for the June meeting to insure that you are able to get the BEMS group rate of \$150 per night (plus tax). The deadline for this rate is also May 21, or until these reserved rooms are gone.

The BEMS rate is for an Ocean View room with balcony, for single or double occupancy. The Mexican Government offers a value-added tax benefit for visitors from outside Mexico. If you provide a copy of your migratory document received upon entering the country, along with a copy of your passport, the hotel can waive the 10% tax, reducing the total tax to 2%. Payment must be made through a wire transfer from a foreign account to a Mexican bank or via a credit card issued abroad. The discounted BEMS rate is available for the nights of June 8–18, 2006. Make reservations by calling (800) 813-2776 from the US or Canada and asking for the BEMS ANNUAL MEETING rate. Or, reserve online at <[www.jwmarriottcancun.com/](http://www.jwmarriottcancun.com/)>. Click on “Book a Reservation.” This will take you to the reservation page where you must enter the group code BEMBEMA and the dates you would like to book, which must be within the approved group room block dates, June 8–18. If you have any special requests you may fax the JW Marriott reservation department directly at: +52 998 848 965, to the attention of Mariangela Coppola.

BEMS Members should remember that it greatly helps the Society’s Annual Meeting budget if we attract enough participants to book more than 350 hotel rooms at the conference facility. If we accomplish this, there is no charge for meeting room rental. So all who plan to attend should register at the special BEMS rate as soon as possible. Thank you!

*–Janet Lathrop, with Gloria Parsley*

# SELECTED STATISTICS FOR THE SOCIETY'S JOURNAL, *BIOELECTROMAGNETICS*, IN 2005

Disposition of Manuscripts Received in Years 2002–2005, with Percentage Rejection Rates

Year Received	2002	2003	2004	2005
Papers Accepted (percent of total received)	99 (59%)	82 (60%)	97 (51%)	29 (14%)
Papers Rejected (percent of total received)	69 (41%)	55 (40%)	88 (46%)	56 (27%)
Pending	0	0	7 (3%)	122 (59%)
<b>TOTAL</b>	<b>168</b>	<b>137</b>	<b>192</b>	<b>207</b>
<b>Notes</b>	includes 13 papers received for 1 Special Issue		includes 23 papers received for 1 Special Issue, and 15 re-submitted after administrative withdrawal*	includes 1 rejection from Special Issue; 22 papers re-submitted after administrative withdrawal

\*Reflects policy change to withdraw papers if revision not received within 3 months of revision request.

Papers Received by Field Type and Exposure System as Judged from Title and Key Words in Data Base for Jan. 1–Dec. 31, 2005

	Humans (epi, lab, etc.)	Organismal (including 1-cell)	Sub-organismal (cell, gene)	Other (dose, theory, comment)	Total
<b>DC/Static</b>	2	16	7	1	26 (13%)
<b>ELF</b>	9	20	24	9	62 (30%)
<b>HF (UHPP, mmW, THz)</b>	14	17 (2)	18 (4)	31 (1)	80 (39%)
<b>PEMF</b>	7	4	4	0	15 (7%)
<b>Other, Mixed</b>	3	5	2	14	24 (12%)
<b>Totals</b>	<b>35 (17%)</b>	<b>62 (30%)</b>	<b>55 (27%)</b>	<b>55 (27%)</b>	<b>207 (100%)</b>

*Bioelectromagnetics* Papers Received by Country, 2005

Country	Articles Accepted	Country, continued	Articles Accepted
China and (Taiwan)	9, 1	Germany	8
India	4	Greece	2
Iran	5	Hungary	2
Japan	17	Ireland	2
Korea	7	Italy	18
Uzbekistan	1	Poland	3
Total Asia	43	Russia	5
Australia	7	Serbia	1
Brazil	7	Spain	9
Egypt	5	Sweden	5
New Zealand	1	Switzerland	3
Total Elsewhere	20	Turkey	18
Austria	5	UK	7
Belgium	1	Total Europe	100
Denmark	1	Canada	8
Estonia	1	Mexico	1
Finland	6	USA	35
Finland	6	Total North America	44
France	3	Total	207

## JOURNAL EDITOR'S COMMENTS

In one of his last reports to the Society's Board of Directors, soon-to-retire *Bioelectromagnetics* Editor in Chief Ben Greenebaum presented several tables at the Board's Midwinter Meeting in February, illustrating various aspects of the journal's content over the past full calendar year, 2005.

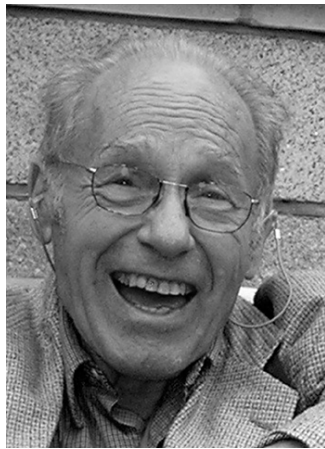
Greenebaum noted that the acceptance rate went down slightly (see top table) last year, after holding steady at about 60% for many years. However, submissions are at an all-time high, excluding the influence of special issues and counting as new papers any late resubmissions under the policy instituted in 2004 of expecting revisions within three months. This increase in number of papers received in 2005 continued the increase noted in 2004. The table at right provides the distribution by country, with World Health Organization regions tallied, as well. Greenebaum noted that the number of papers submitted from Europe has risen as the number submitted from North America fell slightly. As can be seen in the other chart on this page, papers on ELF, DC, and "Other" (including both AC and DC) made up a greater proportion of accepted articles, while HF topics were slightly down, Greenebaum reported.

## BEMS FRIEND STEFAN MACHLUP IS A PIONEER OF PHYSICS SECONDARY EDUCATION

Historians of science and others who remember the late 1950s will recall that the successful launch of the Soviet Union's first spacecraft, Sputnik, shocked the United States and the West's research community and served as a wake-up call to those responsible for science education. Sputnik began a major shift at many levels of Western society; not only career scientists, but parents, teachers and politicians feared that the West would be left behind, struggling to catch up to Soviet technological progress. Calls were heard for reform in science education at all levels—elementary, middle-school and high school. Everyone, it seemed, wanted students in the West to get a better grounding in science and mathematics in order to keep up or get ahead.

A number of new approaches to science education for elementary and secondary school students grew out of this period. One of the most original, creative and effective, specifically aimed at teaching physics, was developed beginning in about 1958 and throughout the 1960s by Uri Haber-Schaim of the Massachusetts Institute of Technology, with scores of other physicist authors, including Harold Pratt and H. Graden Kirksey, Gerald Zacharias, and BEMS friend and former member Stefan Machlup, a solid-state physicist retired from Case Western Reserve University in Cleveland, Ohio, USA.

The physics course Haber-Schaim and colleagues including Machlup pioneered is still recognized as one of the most successful and accurate curricula ever developed for secondary school students. It is known as PSSC, the Physics School Study Course. Machlup, a graduate student Nobel Prize winner Lars Onsager at Yale, considers himself fortunate to have been invited to participate as a co-author of several chapters of the PSSC curriculum and the accompanying textbook, *Introductory Physical Science*.



Stefan Machlup

At the BEMS Annual Meeting in Dublin last June, Machlup and current BEMS member, occupational physician David Black of Auckland, New Zealand, whose own 5th Form Physics class at Takapuna Grammar School, Auckland, used the PSSC curriculum, met and shared anecdotes about PSSC from their respective perspectives as teacher and student.

Black recalls, "The concept was of physics taught as a set of logical ideas, rather than as a series of maths. It was possible to be good at physics without needing to be good at maths," he added. "The curriculum was actually quite brilliant, I think, and it gave one an intuitive understanding of physics that facilitated later learning of the formulae and laws without getting in the

way initially," Black recalled. "I now use the conceptual techniques of explaining physics in my post-graduate teaching of Occupational Medicine at the University of Auckland."

Machlup chuckled as he listened to Black's compliments. "High school physics courses before PSSC were poison!" he agreed. "It needed review and change."



David Black

The PSSC curriculum emphasized hands-on experience and the textbook expanded upon student experiments. As Black remembered, PSSC definitely taught concepts before math. Machlup, who traveled to New Zealand in the 1960s to introduce the PSSC curriculum to the physics teachers, said one limitation of PSSC was that it required teachers skilled in the use of the experiments and laboratory equipment. Machlup remembered that not everything was complex, however. Wave theory was taught using a "Slinky" toy, for example. But rheostats, a small generator and simple circuits were required to be assembled in the classroom to teach electrical and electromagnetics concepts. All the effort was worthwhile, in Machlup's opinion. "The experiments made the concepts happen right there in front of you," he explains. "Then later you found out there was a formula to describe the phenomenon."

"Everything started with an experiment." Much of the equipment (small pumps, tubing, generators) needed to perform the studies is still available on the Internet, from laboratory supply firms like Edmund Scientific.

The PSSC approach to teaching physics is still highly respected and recognized as effective, and like many successful ideas, it sparked imitators. Haber-Schaim and colleagues were recognized for their pioneering work in physics education by a number of science education commissions and experts on science textbook quality, as described in two articles by Senior Editor Janet Raloff of *Science News* in 1999. In 1971, Haber-Schaim was awarded the Oersted Medal, the highest award of the American Association of Physics Teachers, for "notable contributions to the teaching of physics." Born in Israel, Haber-Schaim was a doctoral student in theoretical particle physics under supervision of Enrico Fermi at the University of Chicago. In addition to his work with the PSSC, he served on the faculties of the University of Illinois, Massachusetts Institute of Technology, the Weizmann Institute of Science, and Boston University.

Even reading current reviews of the PSSC text, *Introductory Physical Science*, on Amazon.com makes it clear that the value of PSSC is still recognized and appreciated today. A high school physics teacher in North Dakota wrote in a review this year, "If I could have a dream physics book for the physics I teach, this book is it." A reviewer from Hong Kong added, "Reading this book is not a sterile, nor boring task."

For more information, see <<http://www.sciencenews.org/articles/20010317/bob9.asp>> "Why some schools may not want to go by the book," by Janet Raloff, and <<http://www.sciencenews.org/20010324/bob12.asp>>, "Where's the Book?" by Janet Raloff.

—Janet Lathrop, with thanks to Stefan Machlup and David Black

## NEW ELECTRIC CURRENT DEVELOPED, FIRST IN 100 YEARS

On April 4, Clear Energy, Inc., a small research and development company located in Baltimore, Maryland, announced that the United States Patent Office had granted a patent to Clear Energy for a new type of electrical current, named Sully Direct Current (SDC™) for its inventor, John T. Sullivan. According to a company press release, it has been over 100 years since the last patented electrical current was issued by the U.S. Patent Office.

Clear Energy, Inc., describes the new current using a rhetorical question: "What would happen if you have a polarity reversal that caused DC currents to reverse direction within two or more electrodes without reversing the anode (+) and cathode (-) power supply polarity?" The answer is SDC, an electrical current that "flows for an interval of time in one direction and then in the opposite direction; that is, two or more current paths flowing in alternately reversed directions through or around a circuit," it says.

The plus (+) and minus (-) supply polarities of electrodes remain constant, the same as a DC battery, while the polarities within the electrodes are reversing causing an alternating reversing multi-directional currents similar to AC. AC and SDC both have current reversal, but while AC reverses anode and cathode supply polarity when it changes current direction, SDC changes current direction without swapping the anode and cathode supply lines, Clear Energy explains.

The main difference between AC and SDC is that the plus (+) anode side and the (-) cathode negative side of the power supply remain unchanged, they add. Sully Direct Current can reverse currents at full voltage or zero volts to produce tuned counter EMF forces, while AC typically reverse its current at zero volts. SDC is measured in Sully Watts, also trademarked by the company. Finally, the voltage across the anode (+) and cathode (-) is measured with a DC Volt meter, the current is measured in series between electrodes with an AC current meter.

Clear Energy, Inc., says that its SDC research will continue to develop new applications for this new voltage in many disciplines such as lighting, semi-conductors, capacitors, gravity experiments, fusion, particle accelerators, motors, hydrogen generators, fuel cells, batteries, water purifiers and medical applications. The inventor is hoping that SDC currents will open new doors to scientific discoveries and products that were not possible with AC and DC.

The company and inventor provide a schematic diagram of the new electricity, as well as a video introduction to it, at <http://www.sullydc.com>.

## WHAT DO BEMS JOURNAL IMPACT FACTORS TELL US?

The following is a short version of comments made by *Bioelectromagnetics* Editor in Chief Ben Greenebaum to the BEMS Board at the February Midwinter Meeting concerning Impact Factors. A supporting table follows his remarks.

"In the 2004 calculation (average citations in 2004 of articles published in 2002 and 2003), the latest available, *Bioelectromagnetics* dropped a bit to 1.23 from 1.53 in 2003, while *Bioelectrochemistry* jumped to 2.26 from 1.48. I have always noted that the Impact Factor numbers probably have an uncertainty of +/- 0.2, at least; but these changes could be telling us something. Are they?"

"Looking at the numbers over the past several years, one thing stands out: *Bioelectrochemistry* has jumped in years it has published the proceedings of its biennial meeting, containing many papers that refer to authors' recent publications. It also helped that they had quite thin issues in 2002 and 2003. Looking back, *Bioelectromagnetics* has also jumped in years we've published special issues. We have done a little better in years following our reviews, but not as much as in the years we publish them. So, perhaps the Impact Factors are more sensitive to the reviews (or *Bioelectrochemistry's* Proceedings) referring back to our own recent BEMS articles than because other authors refer to our reviews.

"What does this mean? For one thing, that the numbers need interpretation; they can't just be taken on their own. For another, these numbers by themselves are not the best way to judge a journal, no matter how much library committees or people going through candidates' files would like a simple index.

"Finally, getting to substance, reviews are still good things to publish, though not magic ways to improve the ratings: The list of most-viewed papers on Wiley's Internet site includes a number of reviews, but also a number of original research papers. The journal's editors are always looking for authors to propose a review, though it's often a good idea to contact us in the concept stage to avoid doing a lot of work on a topic that has another review about to appear."

### *Bioelectromagnetics* ISI Impact Factors

The 2004 ratio, published in 2005, shows the average number of citations in 2004, in any journal, of articles from the 2002 or 2003 issues of *Bioelectromagnetics*.

#### *Bioelectromagnetics*:

2004	1.234	52nd of 64	"Biophysics Journals"
2003	1.527	43rd of 67	
2002	1.205	47th of 65	
2001	1.309	44th of 63	
2000	1.947	35th of 66	
1999	1.919	27th of 55	

*See What Are Impact Factors Telling Us? continued, p10*

## CALL FOR PAPERS, DIRECTED ENERGY SYMPOSIUM 2006

BEMS Board Member Michael Murphy of the Air Force Research Laboratory, Brooks City Base, Texas, who is organizing the sessions on bioeffects at the Ninth Annual Directed Energy Symposium to be held on October 30 to November 3, 2006, at the Hyatt Regency Hotel in Albuquerque, New Mexico, USA, invites BEMS members to consider submitting papers to this interesting meeting. The abstract submission deadline is June 15, 2006.

The meeting is sponsored by The Directed Energy Professional Society, Albuquerque, and co-sponsored by the U.S. Air Force Research Laboratory.

This annual symposium brings together researchers, managers, and policy makers from government offices, Department of Defense, Department of Energy and other national laboratories, the intelligence community, industry, universities, and other scientific and engineering institutions to discuss current programs, technology efforts, and the future of Directed Energy, according to organizers. The symposium provides a forum for the exchange of technical information in fields related to the development, testing, and fielding of High Energy Laser (HEL) and High Power Microwave (HPM) systems. There are short courses associated with the symposium, along with distinguished plenary speakers, several focus sessions, a reception and banquet, Best Paper awards in various categories, plus industry and government agency exhibits. There will be no poster session at the Symposium.

Unclassified, public release presentations will be distributed after the Symposium in a CD of proceedings. Contributors are encouraged to submit papers based on their presentations to the *Journal of Directed Energy*, a peer-reviewed publication, for subsequent publication.

Presentations must be suitable to fit in either of two kinds of session—unclassified and publicly open to any Symposium registrant, or classified and open only to U.S. citizens with a classified visit request on file. Details and abstract submission guidelines are available at <http://www.deps.org>.

### Should EMF Be Part of U.S. Agenda? Continued

The NORA Website and April symposium offer the EMF research community a chance to express views and to make the case that EMF research should be continued as part of the national research agenda, Bowman told the newsletter. To date, 17 of about 200 comments at the NORA site have addressed this topic, he added. Those who wish to register their opinion on this matter may do so at <http://www.cdc.gov/niosh/nora/comments.html>. The site asks for input on the types of research and partners needed to identify the areas where new research will make the greatest contributions to preventing work-related injuries, illnesses, and deaths, including estimates of the number of workers at possible risk and the “probability that new information and approaches will make a difference.” It also gives instructions on how to submit a comment by regular post.

—Janet Lathrop, with Dr. Joe Bowman of U.S. NIOSH

## CANCÚN IS A DESTINATION OF INTEREST TO ARCHAEOLOGY

Cancún, the site of this year’s Bioelectromagnetics Society’s Annual Meeting, is located in the peninsula of Yucatán in the federal state of Quintana Roo on the south-east coast of Mexico not far from Cuba. In centuries past, the bay was a refugee for pirates. In pre-colonial times the Maya culture dominated the area and there are still places in Cancún itself where their strong influence is noticeable.

Cancún’s hotel zone is on Nichupte Lagoon, a name that means “full of noses” when translated from Mayan to English. This apparently refers to the fact that many people lived there in the Late Classic period (1250 to 1550 AD) in houses set along the coast and the lagoon.

One of the largest and best preserved remnants of the early settlements is **El Rey**, with 16 structures and two plazas from the Late Classic Period set in a natural depression of land in the middle of Cancún’s hotel zone, facing the Km. 18 marker of Boulevard Kukulcan. Based on weather patterns over historic time, scientists feel that El Rey was relatively well protected from strong winds and seas, from hurricanes and marauding strangers well back into the earliest periods of human habitation. Today it has a peaceful ambience right in the middle of the hectic activities of Cancún’s busy tourist zone. Some artwork survives to offer a glimpse of the old culture at El Rey.

Researchers assume that El Rey formed part of the earliest pre-Colonial commercial area of the lagoon, with a place to receive canoes coming in via the Nizuc channel. El Rey can be reached by taking one of the buses that circulate through the hotel zone. It takes one hour to tour all the buildings.

Visitors to Cancún today do not have to go far to get a taste of the rich archaeological history of the area from other sites throughout the state, because the **Museum of Archeology** is located directly adjacent to the Cancún Convention Center, and access is easy from anywhere in the Hotel Zone. According to one Website, the museum offers interesting and educational seasonal expeditions throughout the region. At various times it has featured exhibits of rare silver jewelry to fine art, bringing “the heart of Mexico” to Cancún and offering “a window into the soul of the country’s rich cultural heritage.”

**The Museum of Popular Mexican Art** at El Embarcadero is another place of interest within Cancún itself that allows visitors with limited time and no chance to book a tour outside the city to see calacas (Day of the Dead skeleton figurines) handcrafts, Mayan relics, and photographs.

**El Meco**, a site recently opened to the public, is located north of Cancún between Puerto Juarez and Punta Sam on Mujeres Bay. This place offers visitors a glimpse of the Postclassic period in Maya culture. It is considered the departure point for the Mayas sailing to nearby Isla Mujeres and as an im-

*See Cancún is Destination of Interest continued, p11*

# BEMS JOURNAL A FOUNDING MEMBER OF WHO'S HINARI

## Access to Journals Benefits Students, Researchers in Many Developing Nations

Since 2002, the publisher of the Society's journal, *Bioelectromagnetics*, John Wiley & Sons, Inc., has participated with other major scientific publishers in the World Health Organization's (WHO) Health InterNetwork Access to Research Initiative, also known as HINARI. In fact, Wiley was one of the six founding HINARI publishers, along with Blackwell, Elsevier Science, The Harcourt Worldwide STM Group, Wolters Kluwer International Health & Science, and Springer Verlag.

They agreed in a statement released in London, UK in 2001: "Recognizing that biomedical research is essential to improving the health of the developing world, and that access to primary biomedical information is essential to research, a new effort is being undertaken to open access to the primary biomedical literature for developing country researchers and academics." HINARI is recognized as a response to calls from WHO Director General Gro Harlem Brundtland and UN Secretary General Kofe Annan for industry and government to "engage in partnerships for improving health in the developing world."

Phase I of HINARI, offering free access to the low GNP nations, was launched in 2002, so *Bioelectromagnetics* was involved from the beginning. Phase II, offering low-cost access to the next group of nations based on GNP, was launched in 2003, according to WHO.

The HINARI program enables developing countries to gain access to full text articles from one of the world's largest collections of biomedical and health literature. More than 3,230 journal titles are now available to health institutions in 113 countries, benefiting many thousands of health workers and researchers, and in turn, contributing to improved world health. Ben Greenebaum, editor in chief of *Bioelectromagnetics*, notes that the HINARI project is "a very important way to let scientists from all over the world learn the latest results and participate in research at the level of quality that is necessary."

As noted, nonprofit institutions in two groups of countries are eligible and may register for access to journals through HINARI at one of two levels, low cost or free, based on gross national product (GNP) per capita using World Bank figures from 2001. Institutions in countries with GNP per capita below \$1000 are eligible for free access to the journals. Institutions in countries with GNP per capita between \$1000 and \$3000 pay a fee of \$1000 per year per institution. The calendar year may start at any time; so if an institution first registers in April, the renewal date is April one year later. HINARI allows institutions registering from Phase 2 countries to use the service for a 3-month free trial period, as well.

In addition, there are a number of journals offered at no cost to ALL countries who qualify to participate in HINARI at either the low-cost or free access level. These journals are: *Science*, *American Medical Association* (10 journals); the *British Medical Journal* Publishing Group (27 journals); *Australian Medical*

*Association Journal*; *New England Journal of Medicine*; *American Society for Biochemistry and Molecular Biology* (4 journals); *Journal of the American Society of Clinical Oncology*; *Nature* Publishing (48 journals) and Rockefeller University Press (3 journals).

According to its Website, HINARI has over 2000 institutions registered in 106 countries. In addition to the six founding partners mentioned above, other partners now include Yale University Library, the International Association of Science, Technical and Medical Publishers (STM), UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR), U.S. National Library of Medicine (NLM), Food and Agriculture Organization (FAO) and Cornell University, Mann Library. And as of July 2005, 70 publishers are contributing content to HINARI, according to WHO.

In addition to posting the eligible country list online, the HINARI Website offers regular tips on using the network, feedback from users, workshop announcements and training modules in English and Spanish, with plans to add training materials in French, Portuguese and Arabic soon.

The HINARI service is coordinated with PubMed, a search engine plus utilities offered by the U.S. National Center for Biotechnology Information (NCBI), the National Library of Science and the U.S. National Institutes of Health on the Internet at <<http://www.pubmed.gov>>. PubMed users can personalize the interface with a username/password sign-in link.

WHO and publishers are committed to working with HINARI in its current format until 2006, after which the system will be reviewed and adapted to improve performance, the coordinators point out. Contact HINARI at WHO in Geneva by e-mail at: [hinari@who.int](mailto:hinari@who.int)

— Janet Lathrop and Ben Greenebaum, with materials from the HINARI Website

## What Are Impact Factors Telling Us? Continued,

### *Bioelectrochemistry:*

2004	2.261	27th of 64	"Biophysics Journals"
2003	1.482	47th of 66	
2002	1.463	41st of 65	
2001	1.096	48th of 63	
2000	1.052	48th of 66	
1999	1.085	36th of 55*	(*Bioelectrochem/Bioenerget.)

### *Electromag. Biol. & Med.:*

2004	0.340	62nd of 64	"Biophysics Journals"
2003	0.310	62nd of 66	
2002	0.317	59th of 65	
2001	0.333	59th of 63*	(*Electro- &
2000	0.400	60th of 66*	Magnetobiology)
1999	0.387	49th of 55*	

— Ben Greenebaum

## IEEE ICES TC95/SC4 MEETING COORDINATES WITH BEMS

Ron Petersen, chair of the Institute of Electrical and Electronics Engineers (IEEE) International Committee on Electromagnetic Safety (ICES), recently announced the meeting schedule, agenda and registration information for members of ICES Technical Committees (TC)95/SC4 and other interested parties. The ICES SC4 meeting will be held from 1 to 4 p.m. on June 10, 2006 at the JW Marriott Cancún Resort and Spa, just prior to the Bioelectromagnetics Society's Annual Meeting at the same hotel.

Cost of the meetings will be \$25 if paid in advance, or \$30 at the door. Make checks payable to IEEE. Credit cards are accepted. To request a registration form for the ICES/TC95/SC4 Meeting on June 10, 2006, contact Arthur G. Varanelli, The Raytheon Company, 47 Foundry Avenue, Waltham, MA 02453 USA. Tel: +1 (781d) 642 2410; Fax: +1 (781) 642 2422.

Registration should be completed before May 31, 2006. Petersen may be reached for more information at Tel. +1 (908) 234-0373; Fax: (908)470 9230, or by e-mail at: r.c.petersen@ieee.org.

Those who plan to attend the ICES meetings may reserve a room at the JW Marriott Cancún Resort and Spa at the BEMS discounted group rate by calling 1 (888) 813-2776 from the US or Canada and asking for the BEMS ANNUAL MEETING rate. The deadline for receiving this group rate is May 21, 2006, or while availability lasts. Online registration is also available at <<http://www.jwmarriottcancun.com>> Click on "Book a Reservation" and use the group code BEMBEMA for booking your dates. Special requests may be sent via FAX to JW Marriott Cancún reservation department directly at: +52 998 848 9601, attention of Mariangela Coppola.

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## UNESCO EMF MEETING PLANNED IN ARMENIA IN JULY

Prof. Sinerik Ayrapetyan, head of Organizing Committee and president of the UNESCO Life Sciences International Postgraduate Educational Center, Yerevan, Armenia, announced the program and topics for the United Nations Educational, Scientific and Cultural Organization (UNESCO) Seminar, "Mechanisms of mechano-transduction in living cells," set for August 1-4, 2006, in Yerevan, Armenia. Seminar topics are expected to include multidisciplinary discussion of mechanical forces and induced modulation of cell functions in plants, microbes and animals, among many others. A roundtable discussion on the possible use of MV-induced cell hydration as a cell marker for determining a hazardous effect of MV and EMF possible uses for standard harmonization is also planned, with practical courses on the mechanisms of the biological effect of MV. The full conference statement is at <[www.biophys.am/?pn=statement&s=1](http://www.biophys.am/?pn=statement&s=1)>. Contact Prof. Sinerik Ayrapetyan, UNESCO Life Sciences International Postgraduate Educational Center, 31 Acharian St., Yerevan, 375040, ARMENIA. Tel: +374 10 624170/612461. Fax: +374 10 624170. See: [www.biophys.am/](http://www.biophys.am/) Also, Congress Hotel, 1 Italy St. in Yerevan. Phone +374 1 58 0095, <[www.congresshotelyerevan.com/](http://www.congresshotelyerevan.com/)>

## Cancún is a Destination of Interest, continued

portant reference for coastal navigation even at night, including navigation through the lagoons, according to historians. The site has 14 structures with a main temple in good condition. There are no organized tours, but it is not difficult for a group to hire a taxi in El Meco and to ask to see the old Mayan ruins. **La Duna** is another site located along the coast, on the grounds of the Sheraton Hotel, where there is a structure that may have aided the Maya in coastal navigation. **Chichen Itza**, about 149 miles from Cancún is considered the most important archaeological zone of the the Mayan World in the region. It was built at the end of the Classic period in the year 900 AD and thrived until the start of the Postclassic in 1200 AD. It was rediscovered in 1842, and restoration has been going on ever since. It includes El Caracol or The Observatory, a room that permitted detailed observation of the vernal equinox.

See <<http://www.cancuntravel.com/archaeology.asp>> as your first link to many interesting Internet sites that introduce visitors to Cancún.

— Janet Lathrop, from Web sources

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## MICROWAVE CONFERENCE OFFERS PRIZE TO TOP PAPER

The 2006 Asia Pacific Microwave Conference, to be held in Japan from December 12 to 15, 2006, is currently accepting paper submissions. Top papers will receive the APMC 2006 Prize for outstanding contributions to the microwave field. Authors are asked to submit papers on active devices and circuits, passive components, systems, basic theory and techniques, or emerging technologies before the deadline of May 31. For more details, visit: <<http://www.odf.jp/ps.html>>

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## CALENDAR

**May 14-18, 2006. VALues in Decisions On Risk, VALDOR 2006.** Stockholm, SWEDEN. Symposium on risk management. See <<http://www.congrex.com/valdor2006>>.

**May 15-19, 2006. The Second European IRPA Congress.** Paris, FRANCE. Organised by the French Society for Radiation Protection (SFRP), a global forum on the radiological protection field for discussion of exposure control, protection against non-ionising radiation and participation of the public with respect to more sensitive questions. See: <http://www.sfrp.asso.fr/>

**June 11-15, 2006. The Bioelectromagnetics Society 28th Annual Meeting.** JW Marriott Cancun Resort and Spa, Blvd. Kukulcan, Km 14.5, Lote, 40-A, Zona Hotelera Cancun, Quintana Roo 77500 MEXICO. US\$150 (single/double) +52 998 848 9600 or toll free (888) 813-2776. For lodging, see <<http://marriott.com/property/propertypage/CUNJW>>. For BEMS Program information, see <<http://www.bioelectromagnetics.org/bems2006/>>.

*Calendar continued on p12*

## Calendar, Continued

**July 16–19, 2006. 12th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM) and the Canadian Radio Sciences (URSI/CNC) Conference.** Marriott Montréal Chateau Champlain, Hotel, Québec, CANADA. Co-hosted by École Polytechnique. See <http://antem.ee.umanitoba.ca/> or for lodging, [www.marriotthotels.com/yulcc](http://www.marriotthotels.com/yulcc)

**August 1–4, 2006. UNESCO Seminar “Mechanisms of Mechano-transduction in Living Cells.”** The Congress Hotel, Yerevan, ARMENIA. Registration deadline July 10, 2006. Lodging information at Tel. +374 1 58 0095; cost is \$78 for a single and \$108 for double occupancy. See: [www.congresshotelyerevan.com/](http://www.congresshotelyerevan.com/) Contact: Prof. Sinerik Ayrapetyan, UNESCO Life Sciences International Postgraduate Educational Center, 31 Acharian St., Yerevan, 375040, ARMENIA. Tel: +374 10 624170/612461. Fax: +374 10 624170. See: [www.biophys.am/](http://www.biophys.am/)

**August 30–September 3, 2006. 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS).** Marriott at Times Square. New York City, USA. Pre-Conference Workshops are also scheduled on August 29–30. Keynote Speaker is Nora D. Volkow, Director, National Institute of Drug Abuse (NIDA), “Imaging the Addicted Human Brain: from Molecules to Behavior.” See <http://embc2006.njit.edu/>

**September 2–6, 2006. International Conference on Environmental Epidemiology & Exposure.** Paris, FRANCE.

**September 3–8, 2006. Bioelectrochemistry Gordon Research Conference.** Contact: Richard Nuccitelli, Center for Bioelectrics, Norfolk, Virginia, USA. Tel: +1 757 683 2405. Mobile: +1 757 613 2619. Fax: +1 757 314 2397. E-mail: [rnuccite@odu.edu](mailto:rnuccite@odu.edu) or [justin.teissie@IPBS.FR](mailto:justin.teissie@IPBS.FR) or [a.m.rajniecek@abdn.ac.uk](mailto:a.m.rajniecek@abdn.ac.uk)

**October 16–20, 2006. 4th Workshop on Biological Effects of Electromagnetic Fields.** The Conference Center of the Creta Maris Hotel, Limenas Hersonisou, Iraklion, Crete, GREECE. An international workshop covering all areas of EMF. See: <http://imm.demokritos.gr/bioeffects> or [www.telecomlab.gr/bioeffects](http://www.telecomlab.gr/bioeffects) or contact Ms Ketty Apostolou, Tel: +30 210 650 3129. Fax: +30 210 6532910. E-mail: [conf2006@imm.demokritos.gr](mailto:conf2006@imm.demokritos.gr)

**October 30–November 3, 2006. Ninth Annual Directed Energy Symposium.** Hyatt Regency Hotel, Albuquerque, New Mexico, USA. Abstract submission deadline is June 15, 2006. See article on page 9 of this issue. For more information, see <http://www.deps.org>.

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## THE BIOELECTROMAGNETICS SOCIETY

2412 COBBLESTONE WAY  
FREDERICK, MD 21702-2626  
USA