BEMS TECHNICAL PROGRAMS NOW MUST GET AN EARLY START

Richard Nuccitelli, chair, and members of the Technical Program Committee for the 2007 BEMS Annual Meeting in Kanazawa, Japan, recently released a draft program for comment by the Board of Directors. Nuccitelli reports that “nearly all” speakers approached have accepted the invitation to give presentations at the 2007 meeting. In the draft program below, speakers whose names appear in bold have accepted. Note that the times of plenary session, social event, business meeting and poster sessions have been left out of the list below.

One reason the draft program has been organized so early in the past two years is that Nuccitelli has met a summer deadline for grant applications to the U.S. National Institute of Health to support the Bioelectromagnetics Society’s Annual Meeting. While the Society enjoys generous support from a score of corporate, institutional, and individual sponsors, the amount raised is not enough to cover all Annual Meeting expenses.

Nuccitelli’s recent report to the BEMS Board notes that several emerging topic areas in which BEMS members have expertise, such as medical applications of EMF, have received increasing attention at the BEMS Annual Meeting are also catching the eye of U.S. NIH research grant committees. The BEMS Development Committee and Technical Program Committees are working to capitalize on that interest, Nuccitelli points out.

DRAFT Technical Program 2007

Monday, June 11, 2007

PLENARY SESSION 1: Bioelectromagnetic Applications to Cancer Diagnosis and Treatment

• Keith Paulsen, Dartmouth College, “Electromagnetic imaging of the breast.”

• Marvin Ziskin, Temple University, “Medical applications of millimeter waves.”

• Isamu Nagano, Kanazawa University, “Magnetic field-induced magnetite hyperthermia for tumor treatment.”

Tuesday, June 12, 2007

PLENARY SESSION 2: Bioelectromagnetic Stimulation of Wound Healing and Regeneration

• Luther Kloth, Marquette University, “Stimulating human wound healing with electric fields.”

• Min Zhao, University of Aberdeen, “The molecular genetics of a cell’s sense for electric fields during wound healing.”

• Richard Borgens, Purdue University, “Electrical stimulation of severed spinal cord repair in humans.”

Wednesday, June 13, 2007

PLENARY SESSION 3: Bioelectromagnetics: Human Exposure Standards and Health Considerations

• Maila Hietanen, Finnish Institute of Occupational Health, “Human exposure: ELF, RF effects.”

• Naohito Yamaguchi, Tokyo Women’s Medical University, Japan, “INTERPHONE Project Results on Cell Phone Use.”

Thursday, June 14, 2007

PLENARY SESSION 4: Bioelectromagnetic Effects on the Human Nervous System I

• Andrew Cei Ahn, Harvard University, “Electro-acupuncture: Applications and mechanisms.”

• Ann Rajnicek, University of Aberdeen, “Mechanism of nerve growth guidance by endogenous electric fields.”

See 2007 DRAFT Technical Program Continued, p7
A couple of weeks after Ben Greenebaum relinquished the editorship of *Bioelectromagnetics* to James C. Lin at the Bioelectromagnetics Society’s Annual Meeting on June 10–15, 2006, in Cancún, Mexico, the two men learned that the journal’s ISI impact factor rose to 2.193—ranked 33 of 65 journals in the biophysics area and 16 of 65 in biology. “This is the first time it has gone over 2.0 in the ten years I have been tracking impact factors for the journal,” Lin remarked in an e-mail to Greenebaum when the figures were released in July. He added, “You should be proud to leave the journal on such a high note!”

Lin also pointed out that during Greenebaum’s editorship, the journal steadily solidified its position as a peer-reviewed journal of high quality and the premier specialized journal in the bioelectromagnetics discipline.

The ISI impact factor expresses the average number of citations per year in any journal of articles that appeared in *Bioelectromagnetics* from the previous two years. A journal with an impact factor above 1.0 is “quite respectable,” according to BEMS publisher Wiley, and most journals fall between 1.0 and 2.0, Greenebaum explained. He feels the all-time-high factor recently released for BEMS may reflect interest in the Supplement published in very late 2003, sponsored by the World Health Organization’s International EMF Project, that included reviews of the RF literature.

While he is quite pleased with the new milestone, Greenebaum cautions that “it is important to remember that the impact factor is only one measure of a journal’s effectiveness; it only measures how a journal’s papers are cited immediately—that is, in the first two years after publication (and except in express journals like *Science*, it takes a year for a paper to be written, reviewed and published). The ‘staying power’ of articles is also important; one should note that several of the papers on our ‘most downloaded’ list are a number of years old, he stresses.

Greenebaum served as Editor in Chief of the journal since 1992 and was an Associate Editor from 1990–1992. His editorship has encompassed volumes 14 (1993) through 27 (2006). In notifying the Society’s Board of Directors in February, 2005 of his intention to step aside, he noted that he would by June, 2006 have accomplished most of his goals for the journal and that he felt it was time to leave before the temptation arose to treat papers in a routine manner.

Greenebaum recently recalled that in the past few years, the journal has considered around 200 submissions annually; by contrast, in 1993 this number was only about 100. The acceptance rate has dropped from 65–70% to around 55% in the most recent statistics. Other changes include the transition from handling manuscripts on paper and via postal services to primarily sending material by e-mail and then, as of April, 2006, to a fully on-line system. Physically, the journal also has changed from publishing 6 issues annually on 7 x 10-inch pages to 8 issues in a full-sized 8.5 x 11-inch format in addition to on line versions. On Greenebaum’s watch, it

See Impact Factor, Greenebaum Farewell Continued, p8

News of a former President of the Society and Editor in Chief of *Bioelectromagnetics*, Don R. Justesen, retired from the Behavioral Radiology Laboratory at the Department of Veterans’ Affairs (VA) Medical Center, Kansas City, Missouri, recently came to BEMS President Ben Greenebaum from former BEMS member Bob Smith, a former graduate student and later colleague of Justesen’s who worked closely with him as a co-principal investigator at the Behavioral Radiology Laboratories at the Kansas City Department of VAMedical Center. Smith, who keeps in touch with his old mentor Justesen, remembers him professionally as “an exemplary scientist who demanded [that] scientific rigor and protocols be observed. On the other hand, he exhibited the courage to entertain new ideas.” Smith’s first EMF studies were not taken seriously by some in the 1970s, but Justesen “courageously permitted me to explore my hypothesis” that power-frequency magnetic fields might be biologically significant, Smith remembers.

Because “Justy” still has many friends in the Society, Greenebaum and Smith felt that BEMS Newsletter readers would appreciate an update. Smith writes, “You cannot reach Justy via email as he is no longer able to use his computer.... The best bet to find out about Justy by email is to communicate with his wife, Pat, at bratella@mindspring.com.” He continues, “Justy has Alzheimer’s syndrome... and is no longer allowed to drive... Pat says that seeing and talking to an old friend seems to bring Justy to a higher level of performance, at least for awhile. I try to see or talk to Justy at least once a month and will continue to do so until the visits are no longer of any benefit. It is a difficult time for all of us that respect, admire, and love Justy. The best we can do for Justy is to continue to treat him as our friend.”

Consulting the 2005 “History of the Bioelectromagnetics Society: The first 25 years,” shows that Justesen was a key figure in the early days of the Society and of the journal, well remembered for his “cogent advice” and “remarkable editorial skills,” Smith says. Justesen served as President of the Society in 1984–85 and in 1988 was appointed as the third Editor in Chief of *Bioelectromagnetics*.

Justesen began his career as an aviation electronics technician in the U.S. Navy during the Korean War. In 1956 he earned his PhD from the University of Utah, having studied the behavioral effects of intense microwave irradiation. From 1959, Justesen chaired the Psychology Department at Westminster College in Salt Lake City. In 1962, he joined the staff of the Veterans Administration Medical Center in Kansas City and the University of Kansas School of Medicine where he was serving when he was elected president of BEMS, according to the BEMS History Book.
Smith says it is well known among long-time BEMS members that Justesen was instrumental in naming the d’Arsonval Award, but “it is less well known that he often wrote or edited the text of the early awards and through a local calligraphy artist produced many of the beautiful illuminated manuscripts.” The Society History Book says Justesen and Eleanor Adair had suggested in 1978 that the new Society be called the d’Arsonval Society, but Board members decided to use the “more descriptive” Bioelectromagnetics Society. The honored name d’Arsonval was subsequently used for the Society’s highest award.

**Justesen Offered Early Support for the Term SAR**

As the BEMS History Book further explains Justesen’s contributions, “It was sometimes difficult for the community to agree even on terminology and dosimetry issues. In 1975, Curtis Johnson proposed using the terminology, ‘Specific Absorption Rate (SAR)’ to replace the more widely accepted ‘dose rate’ to define the absorption rate per unit mass. Johnson, who built the University of Utah into one of the incubators of the bioelectromagnetics community and died just months before the founding of BEMS, felt that SAR was more appropriate terminology for the measurement of RF energy absorption, and that ‘dose rate’ had been simply borrowed from the ionizing radiation community.

“At about the same time, explained Bill Guy, Don Justesen at the Veterans Administration Hospital in Kansas City ‘was probably one of the first researchers who recognized the value of absorbed dose rate or absorbed power density in animal exposure research. He was exposing rats in a modified microwave oven and measured the dose by whole body average temperature rise. From the average temperature rise and the specific heat of the animal tissue he was able to quantify the absorbed dose rate in units of milliwatts per gram. This quantity would later be standardized and become known as specific absorption rate (SAR), most commonly expressed in units of the watt per kilogram (W/kg).’ ” Guy recalled.

“Not everybody in the bioelectromagnetics community immediately accepted SAR as an established dosimetry measure. In the early 1980s, the pages of the Bioelectromagnetics Society Newsletter were peppered with letters to the editor arguing the measure’s legitimacy. Allan H. Frey, one of the founders of BEMS, argued in 1979 that ‘the SAR concept is nothing more than a calculated rate of absorption in an assumed homogeneous mass of tissue. Thus, there is a very real question whether such a quantification, the SAR, has any relevance to the biological organism at incident power densities below about 10 mW/cm².’”

Smith invites BEMS members to keep in touch with Justesen by telephone at (816) 763 4348. “He does quite well in talking about past events and friends, not so well with current events and activities. I used to take Justy to a local restaurant for breakfast and we would talk about a number of subjects. Most of the time, there was little indication of his condition,” Smith adds. In preparing this article, Smith also reflected, “My research on this subject leads me to suggest that BEMS should endeavor to archive the information on the careers of their leading research scientists and leading contributors so that future generations will know and understand the heritage and the personalities on which their research stands.”

– by Bob Smith, PhD, with Janet Lathrop and BEMS History Book materials
PARTICIPANTS IN YEREVAN, ARMENIA, SEMINAR EXPLORED MECHANISMS OF MECHANO-TRANSODUCTION IN LIVING CELLS

For the BEMS Newsletter, Sinerik Ayrapetyan, head of Organizing Committee and president of the UNESCO Life Sciences International Postgraduate Educational Center, Yerevan, Armenia, wrote the following synopsis of discussions that took place at the Seminar, “Mechanisms of mechanotransduction in living cells,” held on August 1–4 in Yerevan. The Seminar was organized by UNESCO Chair-Life Sciences International postgraduate Educational Center in Yerevan, in collaboration with the Office of Naval Research Global (ONRG), the European Office of Aerospace Research and Development (EOARD) and International Union for Pure and Applied Biophysics (IUPAB).

As Ayrapetyan explains, “Living cells are under the continuous effects of internal and external micro-mechanical forces (such as gravity, tension, pressure and shear). However, the nature of the cell mechanosensors and the metabolic pathway, through which the mechanotransduction in living cells is realized, is not clear yet. The elucidation of these mechanisms could bring us to a closer understanding of the mechanisms of functioning of the biological amplifiers and their ability to detect the extremely weak physical (including EMF) and chemical signals, for which the mechanical energy serves as a transient step for realizing their biological effects.”

This problem is one of the global problems in modern Life Sciences and it was the subject for multi-sided discussion during the ONRG/EOARD/IUPAB Seminar, “Mechanisms of mechanotransduction in living cells.”

The Seminar consisted of the following 5 Sessions:

Session 1. Cell bathing aqua medium as an extra-sensitive mechanosensor
Session 2. The acoustic effect of electromagnetic fields
Session 3. Cell Membrane and Mechano-Transduction
Session 4. Dynamic properties of intracellular structures
Session 5. Poster session

Nineteen scientists from 13 countries attended plenary lectures during the Seminar. Twenty-seven MS and PhD students participated in the meeting from which 14 students had Poster presentations, according to Ayrapetyan.

The extra- and intracellular aqua solution as a universal and extra-sensitive mechanosensor was suggested by the meeting co-organizers Profs. Sinerik Ayrapetyan from UNESCO Chair-LSIPE (Armenia) and Igor Vodyanoy from ONR (USA) as the main subject for discussion during the meeting, organizers note.

“At present, the interest in the potential adverse human health effects of mechanical vibration (MV), namely at infrasound and ultrasound frequencies, arises from health concerns. MV at these frequencies is generated by natural (such as earthquakes and wind) and artificial sources, means of transportation, such as automobiles, trucks, aircraft, watercraft, and rail traffic; certain mechanical and EMF therapeutic devices; numerous industrial sources such as heavy machinery and air compressors; air heating and cooling equipment; and household appliances such as washing machines. Thus, because of more and more extensive use of MV and EMF in both civil life and for military purposes and the wide possibility to use MV and EMF-induced modulation of biological effect of different physicochemical factors, which could serve as an instrument for international terror, the clarification of cellular and molecular mechanisms of biological effect of MV seams extremely important for adequate estimation of its biological effects on cell and organism, from the points of environmental protection and public health, as well as to decrease the risk of international terror.

Participants of the Seminar suggested to create a Joint International project for “The study of the role of cell hydration as a universal mechanosensor.” Also, the suggestion of Prof. Gerald Pollack (USA) on the importance of establishing a new international journal, “Water in Living Cell” was unanimously accepted by the participants.

— by Prof. Sinerik Ayrapetyan
NEW BEMS JOURNAL EDITOR DISCUSSES HIS AGENDA

At the Bioelectromagnetics Society’s Board of Directors meeting in June, new Editor in Chief James Lin outlined several of his goals for the journal. An Associate Editor of Bioelectromagnetics since 2003, Lin was named by the Society’s Board of Directors in February, 2006, after a one-year search. He is a professor of Electrical, Computer Engineering and Bioengineering at University of Illinois-Chicago, and received the Society’s d’Arsonval Award in 2003. His research interests include the effects of high frequency fields, including the field interaction mechanisms in the “microwave hearing” effect, and in constructing antenna systems for highly-localized in vivo microwave tissue ablation.

Lin explained, “In identifying potential Associate Editors, I’m guided by the following considerations:

1. Expertise in high (radio-) frequency studies;
2. Substantial knowledge and accomplishments in their disciplines and demonstrated interest in interdisciplinary investigations;
3. Familiarity with large pool of investigators who may serve as BEMS reviewers; and
4. Experience as manuscript reviewers with a broad knowledge of bioelectromagnetics research.

In addition, Lin said, “I regard the following attributes as essential:

1. The candidate should be fair-minded in scientific matters or issues in discharging the editorial duties (this does not mean that one cannot pursue one’s own scientific interests and investigations, controversial or otherwise).
2. The candidate must have the strength to judge each manuscript or study on its own merit, not be influenced by potential scientific bias, and must be able to maintain balance and neutrality.
3. The candidate must be able to function as independent scientists with integrity, irrespective of one’s employment.”

Lin also offered Guidance for Potential Authors, listing factors they should address in submitting manuscripts:

1. Be descriptive, predictive and prescriptive
   - In being descriptive, give proper detail
   - In being predictive, provide parametric dependence
   - In being prescriptive, outline methodology of testing
2. Be descriptive, predictive and prescriptive
   - In being descriptive, give proper detail
   - In being predictive, provide parametric dependence
   - In being prescriptive, outline methodology of testing
3. Be descriptive, predictive and prescriptive
   - In being descriptive, give proper detail
   - In being predictive, provide parametric dependence
   - In being prescriptive, outline methodology of testing

Finally, the new Editor in Chief indicated, “My hope is to help elevate the stature, recognition and value of the Bioelectromagnetics journal. With your help, I would like to see the journal become the preferred vehicle or first choice among scientists in the field for publication of research results and scholarly endeavors.”

Also at the June meeting, Board members approved Lin’s two nominees to the journal’s Editorial Board—Drs. Maria Feychting of the Karolinska Institute, Stockholm, Sweden, and Ben Greenebaum of the University of Wisconsin-Parkside, USA.

Lin also took the opportunity of his first formal report to the BEMS Board to outline some of his philosophy of leadership for the journal. Lin made the following points in a presentation to the Board and to members at the Business Meeting:

Focus of Editorial Efforts
• Elevate BEMS journal’s stature, recognition and value while building on the past
• Facilitate BEMS journal to become the preferred vehicle for publication of research results and scholarly endeavors
• Publish expert reviews on topics with substantial knowledge base
• Improve impact factor [see article on p2]
• Encourage submission and publication of high quality research papers.

Lin also offered Guidance for Potential Authors, listing factors they should address in submitting manuscripts:

For Experimental Papers:
• Describe exposure assessment
• Describe dosimetric characteristics
• Employ proper data analysis (i.e., appropriate statistics, etc.)

For papers on Theory and Mechanistic Hypotheses:
• Be descriptive, predictive and prescriptive

Finally, the new Editor in Chief indicated, “My hope is to help elevate the stature, recognition and value of the Bioelectromagnetics journal. With your help, I would like to see the journal become the preferred vehicle or first choice among scientists in the field for publication of research results and scholarly endeavors.”

-reported by Janet Lathrop, James Lin and Ben Greenebaum
Mobile Manufacturers’ Forum (MMF), an international association of radio equipment manufacturers, was recognized for its generous contribution to the 28th Annual Meeting of the Bioelectromagnetics Society in Cancún, Mexico as the only Gold Sponsor for 2006. Tokens of appreciation were presented to three MMF representatives during the Sponsor Recognition Ceremony. In the photo at right, they are C-K Chou of Motorola on the left, Sakari Lang of Nokia, center, and Christer Tornvik of Ericsson Research, ERA/TF, Ericsson AB, right. MMF companies not represented in the photo are Sagem Communications, TCL & Alcatel Mobile Phones, Alcatel, Phillips, Siemens, Samsung, Panasonic, Mitsubishi, and Sony Ericsson.

Representatives of Silver Level Sponsor organizations that supported the BEMS Annual Meeting in Cancún this year are pictured in the photo at left with President Stefan Engström, at far left. Next to him is Rob Kavet of EPRI, then Tom Watanabe of Nikken in the center, and Lars-Erik Larsson of TeliaSonera representing the GSM Association, is at right. A Silver Sponsor not represented in the photo was The Cellular Telecommunications & Internet Association (CTIA).

The Bioelectromagnetics Society’s Annual Meeting was supported by several Bronze Level sponsors this year. Pictured at left, left to right, they are Frank Prato representing the Lawson Health Research Institute; Alex Thomas of Fralex Therapeutics, Inc.; Bruce Simon of EBI; Kent Hoffman, BioniCare Medical Technologies, Inc.; Michael Repacholi of the World Health Organization’s International EMF Project, and Michael Murphy of the U.S. Air Force Research Laboratory, Radio Frequency Radiation Branch. BEMS Executive Director Gloria Parsley looks on at the far right. Bronze Sponsors not represented in the photo are IVIVI Technologies, Dairyland Power Cooperative, Taser International, Air Force Office of Scientific Research, and Svensk Energi/Elforsk.
NEW EMF RESEARCH PROGRAM TO START IN THE NETHERLANDS

A new Electromagnetic Fields and Health Project administered by The Netherlands Organisation for Health Research and Development (ZonMw) is planning to issue its first Call for Research Proposals in September, according to project officer Stéfan Ellenbroek of ZonMw, The Hague.

Ellenbroek told the BEMS Newsletter that there is some information posted now on the Web and more details are expected to be provided soon at <http://www.zonmw.nl/en/programmes/electromagnetic-fields-and-health-research.html>. ZonMw has identified the following general research areas that research proposals can address:

1. “Social and epidemiological research (determinants of risk perception, the societal impact of precautionary policies and a prospective, epidemiological cohort study)

2. “Biological research (human experiments, animal experiments and in vitro studies; all in specific frequency ranges)

3. “Technological research (studies aimed to improve measuring and modeling of EM fields, and the development of tools for that purpose)

More guidance will be available soon on the project Website before the end of August, with more details on research areas and forms for proposals. Ellenbroek did say that grants are expected to be awarded to investigators with positions at Dutch institutes, but others are certainly free to approach Dutch institutes to propose collaboration.

The Dutch project is scheduled to run for eight years, using total 16.6-million Euro. Organizers hope it will “substantially enhance the Dutch knowledge infrastructure in the area of electromagnetic fields (0–300 GHz) and health, giving the Netherlands its own scientific authority in this area,” ZonMw says in a goal statement on the program Website. “The aim will be both to keep track of new electromagnetic field applications and to clarify some of the actual effects of electromagnetic fields.”

A major part of the funding will come from government, according to Ellenbroek, but a couple of million Euro are expected to come from industry, as well. “This will be a clear minority stake, which is normal in The Netherlands,” he notes.

To assure that new information and research results are communicated in a prompt manner to the public, Ellenbroek and colleagues will collaborate with another new ZonMw project, the Web-based EMF&H Knowledge Platform, to be launched in the next month. An expert committee chaired by Prof. dr. Eric Roubos of the Department of Cellular Animal Physiology, Institute for Neuroscience, Radboud University, Nijmegen, has been named to oversee the EMF and Health Research Programme. Other members who will be familiar to BEMS readers include Anders Ahlbom of the Karolinska Institute, Stockholm; Maila Hietanen of the Finnish Institute of Occupational Health, Helsinki; Peter Wiedemann, the Programmgruppe Mensch, Umwelt, Technik (MUT), Forschungszentrum Jülich, Germany; Meike Mevissen, Vetsuisse Faculty Berne/University of Berne, Switzerland; Lucy Anderson, Laboratory of Comparative Carcinogenesis, National Cancer Institute, Maryland, USA; Luc Martens, University of Ghent, Belgium; Gerard van Rhoon, Department of Hyperthermia, Daniel den Hoed Cancer Center, Rotterdam, The Netherlands, and others.

ZonMw is non-government national health council appointed by the Ministry of Health (VWS) and the Netherlands Organisation for Scientific Research (NWO) to promote quality and innovation in the field of health research and care, the Website describes, with an annual budget of Euro 100 million. “We invest in fundamental and applied research of the highest quality. Where possible, we make sure the outcomes lead to effective practical innovations in health care and prevention.”

—Janet Lathrop and Stéfan Ellenbroek, with Web materials

2007 DRAFT Technical Program, Continued

PLENARY SESSION 4: Bioelectromagnetic Effects on the Human Nervous System I, Continued

• Speaker to be named, “Incapacitation by pulsed electric fields.”

WORKSHOP 1: Basic Techniques in Cytogenetics Research, Vijayalaxmi, organizer

• James McNamee, Health Canada, Ottawa, “Comet Assay.”

• Guenter Obe, University of Essen, Germany, “Chromosomal Aberrations and SCE.”

• Maria Rosaria Scarfi, Naples, Italy, “Micronuclei.”

• Junji Miyakoshi, Hirosaki Univ., Japan, “Mutations.”

WORKSHOP 2: How Specific Absorption Rate is Measured and Calculated in Human Models, Osamu Fujiwara, Nagoya Institute of Technology, Nagoya, Japan.

Friday, June 15, 2007

PLENARY SESSION 5: Bioelectromagnetic Effects on the Nervous System II.

• Andrei Pakhomov, Frank Reidy Research Center for Bioelectrics, “Nanosecond pulsed electric field effects on ion channels and membrane permeability.”

• Anthony Barker, Royal Hallamshire Hospital, UK, “Magnetic stimulation of the central and peripheral nervous system: Implementation and clinical applications.”

• Shoogo Ueno, Kyushu University, Japan, “Ultra-high magnetic field effects on the CNS.”

Former BEMS President Shoogo Ueno is also a member of the Local Organizing Committee for the 2007 meeting in Kanazawa, with Junji Miyakoshi, Masao Taki and Tsukasa Shigemitsu. They suggest that BEMS members may learn more about Kanazawa, one of Japan’s foremost castle towns with many historic places to visit, on the Web at: <http://www.city.kanazawa.ishikawa.jp/index_e.html>. Comments on and suggestions for additions to the DRAFT 2007 Technical Program are welcome to Richard Nuccitelli, e-mail: mucci@odu.edu
Impact Factor, Greenebaum Farewell Continued

went from two Associate Editors to five, and became affiliated with the European Bioelectromagnetics Association (EBEA) and the Society for Physical Regulation in Biology and Medicine (SPRBM).

The founding editor of the journal was Elliott Postow, whose term was 1980–1984. He was followed by Richard D. Phillips in 1984–1989, and by Don Justesen in 1989–1992. Greenebaum is now Emeritus Professor of Physics, University of Wisconsin-Parkside; he has collaborated on research into ELF effects on cell and one-celled organisms and on nerve cell dendrite outgrowth.

On June 10, 2006, Greenebaum offered his final report to the BEMS Board as Editor in Chief of Bioelectromagnetics. Selected parts of that report are presented below.

“This is my last report as Editor, and I have to begin by saying how important my work with the journal and its editors, editorial board members, authors and reviewers has been to me. Through the editorship, I have learned more about bioelectromagnetics, have come to know more wonderful colleagues, and made more good friends than I could possibly have imagined when I took the position in 1992. I thank you all for that.

“I have the utmost confidence that Jim Lin, my successor, will take the journal to greater heights. His nominations for new associate editors [see article, New Journal Editor’s Agenda on p 5] indicate that my confidence will not be misplaced.

“I also take some pride in knowing that the journal continues be the pre-eminent specialized journal in bioelectromagnetics, even through funding shifts and an increasing recognition by less specialized journals—and hence by authors—that bioelectromagnetic reports are important.

“The editor change is probably the most important for the journal; but since June, 2005, it has undergone other changes as well, the most important of which is probably our transition to the Manuscript Central (MS Central) fully on-line manuscript handling, editing and reviewing system.... and the number of papers submitted under the old system that are still under consideration is rapidly diminishing. The editors have now become accustomed to the new system’s advantages and peculiarities, and it seems to be working fairly smoothly. Most authors and reviewers are also navigating it successfully. Jim Lin will undoubtedly institute additional tuning to bring the system in line with his preferences and eliminate some additional rough spots.

“A second change, approved by the Society’s Board of Directors in February, 2006, is the abolishment of the voluntary page charge; though initially a way for authors with research support to assist in the costs of editing the journal if they wished, though acceptance or rejection of a manuscript was never influenced by whether the charge was accepted, few authors decided to accept, it became confusing to other authors, and in the end was the reprint sent to authors accepting it were costing as much the income.

“The usual statistical reports... show that calculations of average time to decision are omitted this year, due to difficulty in coordinating the old and MS Central’s data in the time available. In general, there has been some increase in time while the editors learn the new system; time should soon decrease due to the decrease in communication time and the automatic triggering of reminders to reviewers and editors.”

– Janet Lathrop, with Ben Greenebaum and James Lin

U.S. FCC SEEKING INFO ON RADIO TRANSMITTERS IN MEDICAL DEVICES

According to a recent announcement from the U.S. Federal Communications Commission, all medical device manufacturers, designers, healthcare facilities and other users that use radio communications are encouraged to respond to the FCC Notice of Inquiry (NOI) released on July 18, 2006.

“This NOI presents a unique opportunity to provide information to the FCC to help formulate future telecommunications plans and actions. The NOI includes questions about the present and future needs for medical device radio communications (which includes ‘wireless’ technology).”

The FCC also announced in July that it has initiated a proceeding to establish a new service for advanced medical radio communication (“MedRadio”) devices in the 401–406 MHz band to address the “ever-increasing number of medical devices that are coming to rely upon radio transmissions for critical aspects of their functionality. These devices are improving the healthcare of all Americans by providing relief and recovery of function from many types of illness and injury.” The FCC proposed designating an additional two megahertz of spectrum for these devices, at 401–402 MHz and 405–406 MHz, adjacent to the existing Medical Implant Communications Service (MICS) band at 402–405 MHz, for a total of 5 megahertz specifically designated for medical device radiocommunications.

“Underscoring the flexibility and scope of potential uses under this new service, the FCC proposed to revise its nomenclature and designate the entire 401–406 MHz band as MedRadio service. To accommodate a wider variety of devices than the current MICS service, which is limited to use of implant devices, the FCC proposed allowing the use of body-worn transmitting devices in the MedRadio service. The FCC also proposed increased flexibility for the newly designated 401–402 MHz and 405–406 MHz bands to allow the use of low power, low duty cycle MedRadio devices without requiring the frequency agility capability required by the current MICS rules. The FCC proposed that frequency agility would continue to be required of devices in the core 402–405 MHz band to accommodate devices that might be used for more critical purposes and which might be less compatible with non-frequency-agile devices, and sought comment on this point. Additionally, in the Notice of Inquiry, the FCC sought comment on information concerning developments that are anticipated in the medical devices field and their likely spectrum requirements,” according to the announcement.

Information received by FCC will be coordinated with U.S. Food and Drug Administration (FDA) to help address the issues surrounding wireless technology in and around medical devices and systems, the announcement adds. The comment period extends to October 31, 2006. Information about the NOI and filing comments can be found on the FCC web site, <http://wireless.fcc.gov/ocsinfo/comments.html>. The press release is available at <http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-103A1.pdf>.

– from a US FDA/FCC press release
JOSE SPECIAL ISSUE FEATURES EBEA/BEMS MEMBERS

A recent special issue of the International Journal of Occupational Safety and Ergonomics (JOSE) includes a number of papers by members of the European Bioelectromagnetics Association and BEMS who originally presented them at the “International Workshop on EMF in the Workplace” on September 5–7, 2005, in Warsaw, Poland. The special issue was edited by Maila Hietanen of the Finnish Institute of Occupational Health, Helsinki, and Kjell Hansson Mild of the National Institute for Working Life, Umeå, Sweden.

The workshop, organized by Jolanta Karpowicz and colleagues at the Central Institute for Labour Protection at the National Research Council as the final activity of the European Union’s Centre for Testing and Measurements for Improvement of Safety and Products and Working Life, was co-organized by Paolo Ravazzani and colleagues of EMF-NET, “Effects of Exposure to EMF: from Science to Public Health and Safer Workplace.”

Speakers updated knowledge related to EMF hazards in the workplace and methods of EMF risk evaluation and mitigation for 157 participants from 18 countries, according to the editors’ foreword. “Almost all the most important sources of EMF were discussed, such as power installations (high voltage power lines and transformer stations), electrothermic devices (inductive heaters, welding machines and dielectric dryers), medical devices (MRI, physiotherapy and endosurgery devices), anti-theft devices and metal detectors, military-use devices (radars), wireless communication devices (radio and television broadcasting stations, and mobile phone base stations),” they add. The articles and authors featured in the special issue are:


“EMF in Offices,” by Monica Sandström

“Occupational Exposure to Power Frequency Fields in Some Electrical Transformation Stations in Romania,” by Christian Goiceanu and Razvan Danulescu

“Health Risk Assessment of Occupational Exposure to a Magnetic Field from Magnetic Resonance Imaging Devices,” by Jolanta Karpowicz and Krzysztof Gryz


“Electromagnetic Fields: Principles of Exposure Mitigation,” by Rosaria Falsperla, Giuseppe Spagnoli and Paolo Rossi

“Quasi-Static Electromagnetic Dosimetry: From Basic Principles to Examples of Applications,” by Daniele Andreuccetti and Nicola Zoppetti.

JOSE is published by the Central Institute of Labour Protection, Warsaw. Contact by e-mail at jose@ciop.pl or see <http://www.ciop.pl/jose>.

NEW AC VOLTAGE METER ANNOUNCED BY US NIST

The U.S. National Institute of Standards and Technology (NIST) recently announced that after 10 years of research, it has developed “the world’s first precision instrument for directly measuring alternating current (AC) voltages.” It is being tested for use in NIST’s low-voltage calibration service, where it is expected to “increase significantly the measurement precision of industrial voltmeters, spectrum analyzers, amplifiers and filters,” according to a NIST press release.

The instrument was first described on July 14 at the Conference on Precision Electromagnetic Measurements in Turin, Italy. The patented instrument is based on the same “Josephson junction” technology used in NIST’s widely used direct current (DC) voltage standards, offering high precision based on quantum physics, the agency reported. When a fixed DC voltage is applied across a Josephson junction (two superconducting pieces of metal separated by a thin insulator or normal metal), the junction responds by generating an AC current that oscillates like a wave at a frequency exactly proportional to the applied voltage.

“The new instrument uses arrays of junctions to generate AC pulses in precisely measured voltage units over a range of audio frequencies. Arbitrary waveforms can be generated at different voltage levels for different applications. “The new standard would establish an entirely new method for AC voltage metrology. Until now, AC voltage calibrations have been performed indirectly, by measuring the heat delivered by an instrument to a resistor, and comparing that measurement to the heat delivered by a known DC voltage. At low voltages (such as 2 millivolts), the new AC Josephson junction voltage standard should improve measurement accuracy as much as 1,000-fold,” according to NIST.

“The concept for the new device was co-invented by researchers at NIST and Northrop-Grumman in the mid-1990s. A number of innovations since then have led to the first practical system. For instance, to increase the output voltage, NIST developed ‘nano-stacked’ arrays of Josephson junctions, in which the spacing between junctions is reduced to less than 100 nanometers by stacking the junctions on top of each other. Using this technique NIST can make programmable voltage standard integrated circuits with over 130,000 junctions on a single chip. The new AC instrument currently has a maximum output of 100 millivolts; NIST researchers hope eventually to increase that level to 1 volt.

For more information, contact Laura Ost of NIST by e-mail at laura.ost@nist.gov.

– from NIST sources
EBEA WELCOMES YOU TO BORDEAUX, FRANCE IN 2007

The 8th International Congress of the European Bioelectromagnetics Association (EBEA) has been scheduled for April 10–13, 2007 at the ENSCPB on Avenue Pey Berland, Pessac, France, near Bordeaux.

Congress Chairperson Isabelle Lagroye of the PIOM ENSCPB EPHE CNRS, Bordeaux, points out, scientific activities in bioelectromagnetics are increasing worldwide and now cover an even larger spectrum than before, including intermediate fields, terahertz and ultra wideband (UWB) applications. Studies focus on two main aspects of the subject: Therapeutic applications and potentially harmful effects of exposures to electromagnetic fields. The EBEA has held seven congresses since its foundation. The scope of the 8th EBEA Congress is to provide a forum for presentation and discussion of latest findings on biological effects of electromagnetic fields including dosimetry, interaction mechanisms, health effects, medical applications, risk perception, and policies.

Those who are considering participating in this international EMF Congress are encouraged to submit a summary of their scientific work for either oral or poster presentation. Accepted abstracts will be made available for participants for downloading before the Congress, as a CD in their meeting package, and will be published as a Book of Abstracts on request during advance registration. Instructions for preparing the abstracts and electronic submission, along with a list of hotels will be given in the Second Announcement. The deadline for abstract submission will be October 15, 2006.

The main Congress per se will start on Wednesday, Oct. 11. Before that, Tuesday, Oct. 10 will be devoted to a course for students, covering methods and instrumentation for implementing the EU directive on EMF for occupationally exposed persons. Tuesday may be used by EBEA-associated groups or other invited participating groups for holding parallel meetings. EBEA 2007 will cover the following areas of EMF research:

- Dosimetry & Exposure systems
- Interaction mechanisms
- Human studies
- Epidemiological studies
- In-vitro studies
- In-vivo studies
- Implementation of European Directive on EMF for Workers
- Medical applications
- New emerging technologies UWB, WiFi, WiMax…

EBEA organizers also say they plan to offer a tutorial or special session devoted to discussing implementation of the European Union’s Directive on workers’ EMF exposure, and on the International Agency for Research on Cancer’s evaluation and classification of human RF exposure and carcinogenesis planned for 2007 in light of the ICNIRP review and of the most recent epidemiological studies.

Registration fees are as follows:

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<th>Before 2/28/07</th>
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<tr>
<td>EBEA / BEMS member</td>
<td>350 €</td>
<td>430 €</td>
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<tr>
<td>Students and emeritus</td>
<td>250 €</td>
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<tr>
<td>Non-members</td>
<td>450 €</td>
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<td>Exhibitors</td>
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The registration fee covers the scientific programme, lunches, refreshment during the breaks, Get-Together Party and Congress Dinner. Abstract book will be available in advanced booking with registration form. Other important dates include:

- October 2, 2006 Online registration opens
- October 15, 2006 Abstract submission deadline
- December 1, 2006 Notification of abstract acceptance
- February 28, 2007 Early registration deadline

The 8th International EBEA Congress will be organized in collaboration with the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the World Health Organisation (WHO), COST 281bis, and EMF-NET. The scientific committee to date includes:

- Dr. Michaela Liberti, Rome, Italy
- Dr. Junji Miyakoshi, Hiroasaki, Japan
- Dr. Claudio Pioli, Rome, Italy
- Dr. Michael Repacholi, Rome, Italy
- Dr. Myrtill Simkó, Rostock, Germany
- Dr. Martine Souques, Paris, France
- Dr. Bernard Veyret, Bordeaux, France
- Dr. Vijayalaxmi, San Antonio, Texas, USA
- Dr. Joe Wiart, Issy les Moulineaux, France, along with EBEA Council members:
  - Past Chair György Thuróczy, Budapest, Hungary
  - Dr. Ferdinando Bersani, Bologna, Italy
  - Dr. Bernard Billaudel, Bordeaux, France
  - Dr. Ruggiero Cadossi, Carp, Italy
  - Dr. Jukka Juutilainen, Kuopio, Finland
  - Dr. Niels Kuster, ETT, Zürich, Switzerland
  - Dr. Jacques Lambrozo, Paris, France
  - Dr. Norbert Leitgeb, Graz, Austria
  - Dr. Alexander Lerchli, Bremen, Germany
  - Dr. Philippe Lévêque, Limoges, France.

The Congress Secretariat is ADERA, Centre Condorcet-162 avenue A. Schweitzer BP 196-33 608 PESSAC cedex, FRANCE. Also, watch for the online registration form on the conference web site after October 2, 2006, at <http://www.ebea.org/menu.html>. There is also information on ENSCPB at <http://www.enscpb.fr/piom/>.

The Bioelectromagnetics Society Newsletter July/August 2006
TWO NEW RF RESEARCH PROGRAMS IN EUROPE

A couple of new national RF research projects are getting underway this summer in France and Switzerland. In Paris, Francoise Boudin, director of the Fondation Santé et Radiofréquences (FSR), said proposals were received in July following the Call for Proposals in April. The 5-year, €5-million national research program will end in 2010.

FSR is a collaboratively funded, government and mobile telecommunications industry effort with partners Alcatel, Ericsson France, Motorola, Bouygues Telecom, Orange France, SFR, TDF, and Towercast. It could include epidemiologic, laboratory, or social investigations related to RF exposure, plus an information dissemination component, as well. Boudin said the first round of RF research grants totaling about about €1.2 million could be announced in the Fall on a new Web site in French and in English at <http://www.sante-radiofrequences.org>. A second Call for Proposals is scheduled to go out in October, she added. The FSR Web site recalls that the foundation was first proposed in February by the International Telecommunication Union and the French Parliament’s Office of Evaluation for Scientific and Technological Affairs [l’Office parlementaire d’évaluation des choix scientifiques et technologiques (OPECST)].

In Switzerland, the National Research Programme NRP 57 “Non-ionizing Radiation: Health and Environment” recently received “a good dozen” proposals, according to director Sonja Negovetic of the University of Zurich. She has been busy in July evaluating proposals for the 4-year, 5-million-Swiss-franc RF research program. The Swiss program will be small, Negovetic acknowledged, but it intends to be smart, in part by narrowing its focus to include mainly interaction mechanisms, avoiding any cancer-related endpoints. In this way, the Swiss program can make “an alternative contribution” to worldwide RF research, the organizers hope. They hope to award grants in the Fall, as well, and that the research can begin in January 2007.

The Swiss NRP 57 program is funded only by government, Negovetic said, with no industry contribution. At present there is information available on the Web at <http://www.snf.ch/de/rep/nat/nat_nrp_57.asp>.

CALENDAR

September 2–6, 2006. International Conference on Environmental Epidemiology & Exposure. La Villette Conference Center, Paris, FRANCE. A half-day symposium on Tuesday, Sept. 5, will feature speakers from the INTERPHONE Study of mobile phone use and health effects. They include Elisabeth Cardis and Martine Vrijheid of IARC, Lyon, France; Martin Röösli of the University of Bern, Switzerland; Joachim Schüz of the Danish Cancer Society, and others. The symposium will review the most recent results of epidemiological studies of the relation between mobile telephony and health and discuss future research needs and new and ongoing studies. Contact: the organizers at Tel.: +33 1 44 64 15 15 or by e-mail: scientific.afsse@colloquium.fr or see <http://www.paris2006.afsse.fr/>

September 3–8, 2006. Bioelectrochemistry Gordon Research Conference. Aussois FRANCE. The mechanisms of cellular interactions with electric fields at a nanoscale emphasize the physico-chemical interactions that are present to account for observed biological functions. This approach encourages the interpretation of experimental observations in terms of hypotheses that involve biophysical mechanisms for altering life processes. Although the scheduled presentations are a clear focus of the discussions, all participants are encouraged to present posters that will stimulate additional discussion. To this end, some of the posters will be selected for short presentations to the entire group in a “Hot Topics” session. 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 or justin.teissie@IPBS.FR or a.m.rajnicek@abdn.ac.uk See also: http://www.grc.uri.edu/programs/2006/bioelec.htm

September 13–15, 2006. International Seminar on EMF: The Role of Dosimetry in High-Quality EMF Risk Assessment. Ljubljana, SLOVENIA and Zagreb, CROATIA. Abstract submission deadline is July 15. Hotel rooms reserved until August 1. For registration and lodging forms and information, contact Dr. Peter Gajsek, info@inis.si or Prof. Dina Simunic, dina.simunic@fer.hr or see <http://www.albatros-bled.com/EMF2006>.


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 or contact Ms Ketty Apostolou, Tel: +30 210 650 3129. Fax: +30 210 6532910. E-mail: conf2006@imm.demokritos.gr

Calendar continued on p12
Calendar, Continued


2007

January 10–13, 2007. Society for Physical Regulation in Biology and Medicine’s 25th Annual Scientific Conference: “Functional Tissue Engineering in Regenerative Medicine of Musculoskeletal System.” Sheraton Moana Surfrider Hotel, Honolulu, Hawaii, USA. Topics include tissue engineering, stem cell biology/mechanobiology, biomaterials, tissue wound healing, cell mechanics, tissue biomechanics, cell-matrix interactions, and more. Lodging is $129 single/double occupancy in a block of discounted sleeping rooms at the Sheraton Princess Kaiulani across the street from the conference hotel. Call toll free in the U.S. and Canada (800) 782-9488 or direct +1 808 922-5811. Contact: Program Chair James H-C Wang, e-mail: wanghc@pitt.edu or for abstract submission deadline and instructions, see <http://www.sprbm.org>.


May 21–23, 2007. 4th European Symposium on Non-Lethal Weapons. Stadthalle Ettlingen, GERMANY. Organized by Fraunhofer ICT and The European Working Group on Non-Lethal Weapons (EWG-NLW), this symposium will include such topics as Current and desired Capabilities, Advanced Technologies, Operational and Tactical Aspects, Effects on Targets, Evaluation of Effects and Legal and Public Acceptability. Abstract deadline is October 13, 2006. Contact: Symposium Chair Dr. Klaus-Dieter Thiel, Tel.:+49 (0)721 4640 375; Fax:+49 (0)721 4640 575. E-Mail: klaus-dieter.thielict.fraunhofer.de. Or see <http://www.non-lethal-weapons.com/sy04index.html>.

June 10–15, 2007. The Bioelectromagnetics Society 29th Annual Meeting. Bunka Hall, Kanazawa, JAPAN. See article on p1 of this issue. Contact: Technical Program Chair Richard Nuccitelli, RPN Research, Frank Reidy Research Center for Bioelectrics, 830 Southampton Ave., Suite 5100, Norfolk, VA 23510 USA. Tel: +1 757 683 2405; Fax: +1 757 683 8005. E-mail: <RNuccite@odu.edu>, or Executive Director Glory Parsley, The Bioelectromagnetics Society, 2412 Cobblestone Way, Frederick, MD 21702-2626 USA. Tel. (301) 663-4252; FAX: (301) 694-4948. Email: bemsoffice@aol.com or Watch <http://www.bioelectromagnetics.org> for details.

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