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BEMS MEMBERS APPROVE CONSTITUTION AND BY-LAW CHANGES



Stefan Engström

Dear BEMS Members: It is my pleasure to let you know that the proposed changes to our constitution and by-laws were approved by the membership. The transition to permitting electronic voting for all matters passed 97 to 3 and the suggestion to move to a system that does not have to involve run-off elections was approved 77 to 23.

I find it encouraging that we now have good acceptance of electronic voting as it is not only better in terms of convenience. In my opinion it is also superior from the point

of view of voting process integrity. It is easier to keep the voting anonymous and it also helps in avoiding mistakes in the handling of ballots as well as making sure that each eligible member gets to vote once (and once only).

Not requiring run-off elections for electing members of the board of directors was more controversial (as I think anybody would have expected). The change developed out of the accumulated frustration our nominating committees have experienced over the years. The committee works hard to come up with run-off candidates for all offices and when the election results are in, the runner-up may feel a bit of relief at having dodged some extra work volunteering for the society, but I would guess that he or she may not be as eager to run again. This "depletion" of candidates builds up in a relatively small society such as ours.

This constitutional change does significantly change the dynamics of how the society's officers are elected. Now, even more than before, the nominating committee needs your help to find the leaders of our society. For the next rotation of board members, there will be an election as before. Then, right after the annual meeting in June of 2006, the new past-president becomes chair of the nominating committee and will start thinking of the next slate of candidates. I will remind you then but you can start thinking now about who would make a good candidate for the future BEMS board of directors. The text changes are reviewed in the following columns.

—Stefan Engström, President

Background—At the Winter Board of Directors Meeting last February, several changes were recommended by the Long Range Planning Committee. These were published in the President's article in the BEMS January/February 2005 Newsletter Issue #182. The recommendations required Members' approval to amend the Constitution.

Recommendation I: The Board recognizes that with the successful implementation of electronic voting, the requirements for mailing letter ballots in Article VIII of the Constitution and Article IX of the By Laws are both outdated. Therefore, the Board recommends updating both Articles to add the option of electronic balloting.

OLD ARTICLE VIII: No part of the Constitution shall be amended or annulled except by formal proposal of an Amendment, followed by opportunity for discussion at an Annual Business Meeting and by a letter ballot.

NEW ARTICLE VIII: No part of the Constitution shall be amended or annulled except by formal proposal of an Amendment, followed by opportunity for discussion at an Annual Business Meeting and by either electronic or paper balloting.

OLD ARTICLE VIII: To be valid, each ballot must be properly marked and be mailed to the Secretary in time to be received not later than a date specified on the ballot form.

NEW ARTICLE VIII: To be valid, each ballot must be cast prior to the close of the election.

By Laws, Article IX — Amendments

OLD ARTICLE IX: The Board may substitute a letter ballot for the vote at the Annual Business Meeting if time and the importance of the issue warrant.

See Constitution, By-Laws Changes continued, p2

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Constitution, By-Laws Changes, Continued

NEW ARTICLE IX: The Board may substitute either electronic or paper balloting for the vote at the Annual Business Meeting if time and the importance of the issue warrant.

Recommendation II: Recognizing the limited pool of available leaders and the inefficiency of contested elections, the Board recommends that the Nominating Committee prepare a slate that typically has one nominee per office. Two or more nominees may appear where the Nominating Committee finds it in the Society's best interests and the ballot shall always include space for write-in candidates as described in the By-Laws. Following discussion at the Annual Business Meeting, eligible members will have the opportunity to vote on a Constitutional amendment that will change the requirement from "at least two candidates for each office" to "one or more candidates for each office."

OLD: Article V - 2. The Board shall appoint a Nominating Committee consisting of the Past-President, serving as Chairman, and two Society Members. *The Committee shall present a slate with at least two candidates for each office, excepting only the Office of the Editor-in-Chief.* Additional nominations may be made by petition of five (5) percent of eligible Members of the Society. A space for a write-in candidate for each office shall be provided on the ballot.

NEW: Article V - 2. The Board shall appoint a Nominating Committee consisting of the Past-President, serving as Chairman, and two Society Members. *The Committee shall present a slate of one or more candidates for each office, excepting only the Office of the Editor-in-Chief.* Additional nominations may be made by petition of five (5) percent of eligible Members of the Society. A space for a write-in candidate for each office shall be provided on the ballot.

Both these recommendations were discussed at the Annual Business Meeting, June 22, 2005 in Dublin, Ireland, and an electronic vote of the membership was held in Fall 2005.

FGF, COST 281 WORKSHOP ON SUBTLE THERMAL RF EFFECTS

Editors' Note: A workshop on subtle thermal effects of weak RF fields was hosted by the Forschungsgemeinschaft Funk (FGF) in cooperation with COST 281 and the State Ministry of Environment and Transport, Baden-Württemberg, November 21–23, 2005 in Stuttgart, Germany. The following report was shortened from one prepared by Sheila Johnston for FGF and is used with kind permission of Dr. Johnston and Dr. Gerd Friedrich of FGF and COST 281.

Participants were welcomed to the opening session by Roland Glaser, retired from the Humboldt-University of Berlin, who introduced the main topics as thermoreception, thermoregulation and "non-thermal" effects. At strong RF-fields greater than 1000 W/kg, biophysical mechanisms of 'nonthermal effects' are known as dielectrophoreses and electrorotation, he noted. He then posed a thematic question: at weak RF-fields (less than various guideline limits; 10–0.08 W/kg) are "nonthermal effects" actually due to biophysical mechanisms of subtle thermal reactions of thermoreceptors at the cellular, body or behavioural levels?

Over the next three days, participants discussed:

1. Molecular and physiological aspects of thermoregulation in

mechanoreceptors in fire-seeking beetles, in transient receptor protein (TRP) channels in humans, and with GrpE regulating the DnaK chaperone system (of heat shock proteins) in *E coli*.

2. Subtle thermal effects of *in vitro* experiments with RF fields with reference to dosimetry in tissue cultures. Possible RF exposure effects related to nonthermal properties of cell membranes, DNA, and proteins. In many experiments there is the difficulty of separating subtle nonthermal effects from thermal artifacts.

3. The possibility of subtle thermal effects in RF-experiments with animals and human volunteers including a review of the source of the increase in skin temperature during mobile phone calls, SAR and temperature elevations in the human head during RF exposure, and the subtle thermal effects of low-level GSM, UMTS signals on the body weight of hamsters and mice.

4. Practical suggestions on the use of EMF thresholds for (subtle) thermal effects in animal studies

5. Recommendations for further research.

Speakers on topics of Molecular and Physiological Aspects of Thermoregulation included Peter Wust of the Klinik für Strahlenheilkunde, Charité, Humboldt-University of Berlin, Germany, on "Thermoregulatory Mechanisms in Humans." Also, Helmut Schmitz of the University of Bonn described thermal and photomechanic infrared receptors in fire-seeking beetles. Participants identified a key question—Do humans have temperature sensors in the range of 100th–1000th of a degree temperature change? At present there is no known human thermosensor as sensitive as these insects' or the snake's thermosensors to heat, but Wolfgang Hanke of the University of Hohenheim presented a hypothesis for such a receptor, based on a complex interaction of existing mechanisms. He also made a theoretical proposal on a possible thermal mechanism in nerve cells that could increase the sensitivity to temperature changes to fractions of a degree via a mechanism related to spreading depression (SD), a neurophysiological phenomenon that occurs in the grey matter of the CNS such as in the retina and hippocampus. Next, Philipp Christen of the University of Zurich made a presentation on the thermosensor control in the DnaK chaperone system.

Subtle Thermal Effects of *in vitro* Experiments

Jürg Fröhlich of the Swiss ETH Foundation, Zurich, discussed the requirements, dosimetry and performance comparison of different setups for the exposure of cells used in current RF studies. He compared the performance of different setups for *in vitro* exposure setups used in current studies (e.g., REFLEX, Perform-B) with respect to general dosimetry requirements, principal coupling mechanisms, RF absorption, and effects of the meniscus of cell suspension mediums.

Also in this session, Jan Gimsa of the University of Rostock gave a talk on the influence of the dielectric properties of cell membrane molecules on subcellular RF field-distribution, summarizing his work on cell microdosimetry based on the frequency-dependent properties of the most abundant molecules obtained from published literature studies, and from his own experiments.

Kenneth Foster of the University of Pennsylvania, in his talk, "More

See FGF, COST 281 Subtle Thermal Effects Continued, p8

LOCAL ARRANGEMENTS CHAIR FOR BIOEM 2005 IS SALUTED

I have been involved in the planning of the last 20 annual meetings for BEMS. Over all those years, BEMS did not utilize a Local Arrangements Committee. EBEA, however, relies heavily on the planning and coordinating skills of one of their local members for their bi-annual meetings. Once Dublin was chosen as the joint meeting destination, EBEA nominated Adriele Prina Mello to serve as the Local Arrangements Chair. Adriele proved to be an excellent resource. Every request that was made he met with endless enthusiasm and boundless energy. There is a long list of things that Adriele helped with, constantly exceeding my wildest expectations.



BEMS Executive Director Gloria Parsley with President Stefan Engström, center, and hard-working local organizer Adriele Prina Mello of Trinity College, Dublin.

Two years after signing the contract with the University College, it was time to rent specific meeting rooms. So I asked Adriele to visit the rooms and provide me with his personal observations. During his visit, Adriele found out that the University's audiovisual equipment permanently mounted in each room couldn't be utilized for our conference. He then obtained recommendations for audiovisual companies. Adriele also met with the Irish catering companies, sampled their selections and provided me with his advise.

Working fervently with the Development Committee, Adriele procured several grants in support of the joint meeting. The Wednesday night reception at Trinity College was also planned and organized by Adriele. As a Research Fellow in SFI Trinity's Nanoscience Laboratory, Adriele arranged for BioEM's discounted purchase of the Trinity College souvenir chocolate bars for registrants. He also contacted the Irish Tourist Board and arranged for maps and other handouts for attendees.

In my opinion, the most valuable service Adriele provided was the volunteer management of the Speaker Ready Room. This involved donating several laptops and projectors for the entire week so that BioEM 2005 did not incur any rental expenses. The speaker ready room was also staffed by volunteers who were trained and supervised. The presentation were transferred to a computer and then ordered into individual session folders. Each session was burned onto a CD and given to the audiovisual technician prior to the beginning of each session.

Many comments on the evaluations expressed appreciation for the smooth operation of the speaker ready room and the audio visual presentations. Bioelectromagnetics 2005 was a very successful meeting, and a great deal of the credit goes to Adriele Prina Mello. The future Local Arrangement Chairpersons have some pretty big shoes to fill!

– BEMS Executive Director Gloria Parsley

BEMS HISTORY NOW ONLINE

The Bioelectromagnetics Society is very pleased to offer a record and celebration of the first 25 years of the Society, now in print. The BEMS Officers and Board of Directors would like to thank the many people who worked long and hard on this project. The principal author is William Beck of Lakeside Writers Group, Indianapolis. Local area authors are Kjell Hansson Mild, Sweden; Annette Duchene, France; Jiri Silny, Germany; Martino Grandolfo, Italy; Walter Rogers, Japan; Alejandro Ubeda, Spain, and John Male in the UK. The manuscript was edited by Asher Sheppard and Carl Blackman. Members of the History Committee overseeing the project were Carl Blackman, Chair; Kjell Hansson Mild; Don Justesen; John Osepchuk; Tom Rozzell, and Shoogo Ueno. They were assisted along the way by *ad hoc* members Indira Nair, Maria Stuchly, Ben Greenebaum, and Maria Feychting. Finally, the booklet was checked and re-read before publication by Ken Foster, Bill Kaune, Gabi Nindl Waite, Kristie L. Ebi and Stefan Engström. The 44-page, illustrated history of the Society is available as a pdf file at www.bioelectromagnetics.org/doc/bems-history.pdf

It is also available as an on-demand print booklet from www.cafepress.com/bems

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.

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OPINION

Blank Sees Bias in Newsletter Editorial Choices

Dear Sir:

All individuals have biases, but editors are supposed to suppress such impulses when they do their job. At the BEMS Board meeting in February 2004, I specifically pointed out

“... that the editor of our own Newsletter, in an interview with a leading science magazine, advises that, ‘We should stop spending money [on research].’ (*New Scientist*, September 13, 2003). Doesn’t the Editor realize that in advocating limits on research he is in clear violation of our By-Laws?...”

I did not expect the review by the BEMS Board to eliminate the biases of the Editor, but I hoped he would learn to exercise greater self-control. This has not happened.

In the Sept/Oct 2005 issue of the Newsletter, on the page immediately following the proposed editorial guidelines, there was an Opinion piece excerpted from an article by JP Ioannidis, but not signed by him. The title, “Why Most Published Research Findings Are False”, appears to say research is worthless and stop spending on research. What is unstated in the excerpt is that Ioannidis largely refers to drug related, clinical/epidemiological research. But even considering the limited scope of the article, the title is incorrect. In a *refereed* article by Ioannidis, published in the *Journal of the American Medical Association* (JAMA 294:218-228, 2005) and entitled ‘Contradicted and Initially Stronger Effects in Highly Cited Clinical Research’, only 16% (not a majority!) of the findings in the original papers were contradicted. This result is not unreasonable, given the nature of clinical research and the particular deficiencies of small, non-randomized clinical trials.

I believe the Opinion section should not be used by the Editor as a vehicle to promote ideas that are antithetical to the mission of the Society. The Editor should promote research, and not discredit it. He can solicit articles from experts, but he should not choose excerpts. Perhaps, Ioannidis would have chosen to publicize some of his other ideas about deficiencies in research, such as the bias in research funded by industry.

By and large, I agree with Stefan Engström’s Opinion article about bias, but do not agree with his rejection of an ‘oversight committee.’ Perhaps he would favor an ‘editorial board,’ which is certainly a more appropriate term. In addition to providing better representation of the wide spectrum of interests in the Society, an editorial board could share the burdens of producing the Newsletter.

—Martin Blank (*BEMS President 1997–1998*)

Newsletter Editor Swicord Replies

I am grateful to Dr. Blank for raising these issues and providing the opportunity to clarify my position. His first issue relates to my position on research and I hope most people who know me realize I am not against research. I do not want to be the former president of a former Society, thus I expend energy in trying to

promote BEMS in ways that are in keeping with the Society’s Long Term Plan. The issue I was addressing in the *New Scientist* interview was how much testing is required for health officials and regulators to conduct a health risk analysis.

More than \$200 million has been spent in the last 10 years or so, on the question of whether emission from cell phones can cause any adverse health outcome. No reported effect has been independently replicated (same result from the same protocol). Should we look further or are we dealing with a null hypothesis? I believe that the World Health Organization’s International EMF Project has addressed this issue by defining a research agenda (I would prefer the term testing agenda, in that established procedures are used to determine the presence or absence of an adverse outcome under specific conditions). From a public health perspective, should health authorities spend another \$200 million on RF or do they address other and perhaps more pressing health issues?

It is important to put aside our own personal interests to address this question. This is my personal view and not necessarily that of industry. The industry view is and has been that more, well conducted research will further strengthen the analysis of RF safety conducted by independent panels around the world over the last 5 years. A limited amount of additional testing is defined by the WHO agenda.

I am not sure that I agree with all of it but I yield to that independent panel. If significant findings come forth from ongoing work or the work defined by the WHO agenda, then additional research should be initiated. Otherwise researchers (including BEMS researchers) need to move on to more productive areas and health authorities to other critical issues. The Society and its members must be pragmatic for their own survival and it is disingenuous for us to raise false hopes.

I am somewhat taken back by Dr. Blank’s reaction to the excerpt from the article by John P. A. Ioannidis that Jan and I and others who brought it to our attention thought important, because of the issues concerning quality of research that it raised. I do not think Ioannidis had BEMS in mind when he wrote this. He was being critical of scientific research in general. BEMS is not considered a “mainstream” Society and thus we need to pay even closer attention to our quality. Are we contributing more or less than the average of “false findings”? The message to me is that we need to be more self (or maybe collectively) critical to improve our research. The issue is not whether the rate of false POSITIVE reports is 16% or 60% but rather that they exist throughout the research community and this problem needs to be addressed.

I also would not reach the conclusion that one should stop funding research. The message to funding organizations is to stop funding sloppy research. The message to researchers is to not rush to publication, but wait and develop a quality product. False findings lead to a greater economic and personal burden. The classical example is the report of cold fusion that led to numerous replication attempts at some expense. Some institutions require positive findings for the PhD dissertation. Failed attempts at replication can cause considerable loss of time to graduate students. Can BEMS be better than the average (what ever it is)? This we must do, so let’s try.

—Mays Swicord, *BEMS Newsletter Editor*

OPINION

An Open Letter to the BEMS Board and Members

I have just received Supplement 7, 2005 of the Journal of the Bioelectromagnetics Society. I am outraged! Once again, BEMS has taken upon itself to publish under the mantle of BEMS another organization's information and perspective. In Supplement 6, BEMS, to loud protestations, allowed our Journal to be hijacked by the IEEE—even though IEEE had its own publication.

This time, Supplement 7 of BEMS is for all intents and purposes a WHO Journal. Although printed in the guise of being a Journal of the Bioelectromagnetics Society with the inside cover listing the BEMS' Editor-In-Chief, Associate Editors and Editorial Board, Supplement 7 is decidedly not the Journal of the Bioelectromagnetics Society. How do we know this? Because it is not only a one-sided presentation of a WHO symposium but its editors are not the editors of our Journal, but rather a cohort consisting of Mike Repacholi, Richard Saunders, Emilie van Deventer and Leeka Kheifets. The first 3 are from WHO and the later, formerly from WHO—and are listed for no purpose other than to illustrate how linked Supplement 7 is with the WHO EMF Project organization.

I have no objection to the WHO EMF Project publishing its work in a WHO journal or in any other format of its choosing. What I do object to is WHO using our Journal—and BEMS allowing our Journal to be so used—as WHO's platform. More specifically, my objections to Supplement 7 are the following:

1. This arrangement lacks the needed transparency: there is no articulation of the rationale behind the BEMS publication of another's work/perspective, there is no information concerning BEMS Journal's/BEMS organization's policies justifying such, there is no information about the peer review process used, nor is information provided what, if any, money was involved.
2. By allowing another organization to publish its work as our Journal it both gives (as our Past President, Martin Blank wrote in protestation of Supplement 6), "the imprimatur" of BEMS to WHO and conversely hands over BEMS reputation/credibility to another organization.
3. Allowing (again quoting Dr. Blank) a "set of papers that are one-sided and do not represent the diversity of scientific views in the BEMS community" smacks of bias and an *unbalanced message* that was so contested and controversial with the IEEE Supplement. [This last objection is not meant to get us into a trap as to the existence or non-existence of bias in Supplement 7, but rather to let stand as objectionable its potentiality.]

Because of these objections I am calling for the Board of Directors to provide a complete report concerning this matter, including answers to the five questions below, to the entire membership:

- Was this Supplement peer reviewed, and if peer reviewed, how were the referees chosen and who did the choosing?
- Did the cost of this Supplement come from Journal dues, BEMS or WHO?
- Were any payments made to the Bioelectromagnetics Society organization or to any member of BEMS to facilitate in anyway the publication of this Supplement?

- Were payments made to the journal publisher, John Wiley & Sons?
- How did this Supplement come to be printed?

The BEMS Newsletter recently reported an UPDATE ON NEWSLETTER BIAS INVESTIGATION (July/August 2005, page 4) by Dariusz Leszczynski, Chair of the Subcommittee to Investigate Bias. While this investigation concerned bias in the Newsletter, perhaps it should have included the Journal as well? The unanimous decision of the Subcommittee, should be read as one considers the publication of the recent Journal Supplement. It reads, "Therefore, the Subcommittee's members have unanimously agreed that the mechanisms should be put in place, which would prevent or minimise the risk of publication of conference reports, as well as other items published in the BEMS Newsletter, that could be considered as biased." Sadly, this unanimous recommendation, was rejected by the Board, but hopefully can be revisited.

Therefore I am calling for two actions: 1) Retroactively, I request that the Board publish a retraction concerning Supplement 7, stating that this is not a publication of the Bioelectromagnetics Society; 2) The institution of the aforementioned bias mechanism for both the Newsletter and future Journal Supplements.

—Lloyd Morgan, Berkeley, Calif.

The Editor in Chief Responds

Lloyd Morgan's letter asks five specific questions about the facts surrounding publication of Supplement 7 of *Bioelectromagnetics*. I take the liberty of putting his last question first:

Morgan asks, "**How did this Supplement come to be printed?**"

Shortly after I became Editor, I asked that the Board of Directors establish a policy that it approve the general idea of any future supplements and dedicated regular issues. The policy was needed because these special issues either reduce the number of pages available to contributed papers from the number of pages agreed by the Society and the publisher that will be in the journal in a given year, or else the Society is billed for the cost of publishing extra pages and, in the case of a separate supplemental issue, the extra costs of assembling, printing, mailing, etc. an extra issue. The Board agreed and established the policy. Supplement 7, like all other special issues I have handled (Supplements 2–6; there have been no dedicated regular issues) have been through this process.

Mike Repacholi of the WHO EMF Project inquired, probably in mid/late 2003 (I am estimating dates in lieu of searching old e-mails and Board minutes), about publishing the proceedings of this particular meeting as a journal supplement. While WHO publishes monographs and pamphlets of various sorts, in my experience it has left publication of proceedings to other channels, including ICNIRP monographs and various other journals. He and I discussed who would be guest editors, how the reviewing process would be handled, and, in consultation with Wiley staff, estimates of the costs involved, which he agreed to pay. I received a copy of the program, which had already been established. A proposal covering all of these items was presented, discussed by email and approved by the group of Associate Editors and then by the Editorial Board. It was then presented and

See *OPINION—Editor in Chief Replies, Continued*, p10

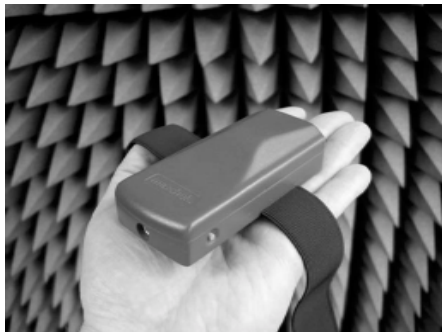
RESEARCH GROUPS MOVE RF DOSIMETRY FORWARD

Antennessa Corp. of France, with research and development staff scientists at France Télécom and others, have developed a 9-band isotropic selective dosimeter called the DSP 090 which could provide EMF epidemiologists with a practical and accurate tool for characterizing personal RF EMF exposure from the major exposure contributors—FM radio, TV, GSM 900 and 1800 MHz—and to a lesser extent, UMTS bands, according to observers. A member of the France Télécom research group, Joe Wiart spoke at recent Bioelectromagnetics Society annual meetings about the instrument, which is now featured on the Antennessa Website at www.antennessa.com/mods/en/gen/home/

At the same time, a team of German researchers in Munich led by Katja Radon of the Institute for Occupational and Environmental Medicine, Ludwig-Maximilians-University Munich and including Jutta Brix of the Bavarian Ministry of Public Health, have helped the Maschek Company of Kaufering, Germany (www.maschek.de) to develop a personal dosimeter prototype called the Maschek dosimeter.

Their Brief Communication is available in the “Early View” feature for *Bioelectromagnetics* (2006 v27#2), describing a feasibility study they conducted using both meters to test their usefulness for base station epidemiology.

Radon and colleagues looked at exposure levels over a 24-hour monitoring period using subjects’ self-reported exposure to a base station and compared data collected both by the Antennessa and by the Maschek dosimeters. Radon et al.’s study followed 42 children, 57 adolescents and 64 adults using the Maschek dosimeter. And, during their pilot study the Antennessa became available, so



The Maschek meter weighs only a few ounces.

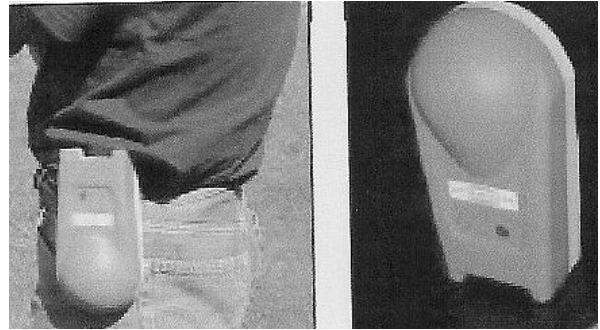
for 32 study subjects who had not yet participated in the main study—7 children, 13 adolescents, 12 adults, plus an added 8 adults—the researchers designed a comparison study between the two dosimeters.

The frequency ranges covered by each device do not

overlap perfectly, according to the French and German research groups. The Antennessa measures television and radio frequencies, but not DECT or wireless LAN frequencies. The Maschek dosimeter prototype which is smaller and lighter does not include FM radio or television (174–830 MHz), and it cannot discriminate between up- and downlink channels of GSM, DCS or UMTS. Therefore for the feasibility study described above, frequency bands not measured by both dosimeters were not included.

As Wiart explains, an alternative to the *in situ* approach to mod-

eling exposure at a fixed location was identified as an important requirement for conducting methodologically sound epidemiology. Researchers wished to be able to accurately characterize the



The Antennessa as worn on the belt, left, and standing alone.

RF exposure of subjects as they go about their normal daily activities while also participating as subjects in a study. A personal dosimeter should not interfere with normal life.

According to various measurement programs in Europe, Wiart explains, a dynamic of 40 dB and a range of 0.05 V/m to 5 V/m seemed to developers of the Antennessa a “reasonable target” for such a personal dosimeter. Another factor in the device’s development is that mobile handset signals may be comparable or higher than those of a nearby base station, so it was of interest to develop a dosimeter that could record these without allowing the dosimeter to be saturated by the handset signals. Recently, Radon et al. announced that the detection limit of the Maschek dosimeter has been improved and is now 0.02 V/m. The upper limit is now 5 V/m.

In addition to the differences in frequency range measured, the Antennessa and Maschek prototypes differ in weight, size and measurement cycle, and number of samples stored. For example, the Antennessa with more versatility in frequency coverage weighs 450 grams (about 15.8 ounces), while the Maschek with limited frequency coverage weighs only about 70 grams. It was possible for children to carry the device all day in their backpacks, Radon and colleagues point out. And the Antennessa DSP 090 has a maximum storage capacity of 7,000 samples, while the Maschek prototype stores 100,000 samples.

Most recently, Simon Mann and colleagues in the Radiation Protection Division of the UK Health Protection Agency (HPA) published a 102-page report with results of their laboratory testing and “real life” practical trials of the Antennessa personal RF dosimeter among volunteers.

As part of the study, Mann and colleagues assessed the device’s usefulness for measuring general public exposure to base stations, mobile phones, and various other RF transmission sources, as an adjunct to the UK Mobile Telecommunications and Health Research (MTHR) program.

Overall, Mann et al. observed that several technical problems with the Antennessa need to be addressed. For example, a shoulder bag might make the rather heavy instrument easier to carry.

See RF Personal Dosimeter Continued, p9

COST281 PLANS STATEMENT TO EUROPEAN COMMISSION ON EMF AND STATISTICS

At a meeting of COST281 in Trondheim, Norway, in October, participants heard a report from a COST281 Task Group on “statistics in bioelectromagnetics,” led by Joe Wiart of the French national research program, who is also a research director at France Telecom. He and colleagues proposed a draft COST281 position statement on the importance of using high-quality statistics in bioelectromagnetics research, to be sent to the European Commission (EC) late this year.

According to COST281 Secretary Gerd Friedrich, COST281 wants to send a short, clear statement to EC science and health policy directors on this topic. At the Trondheim meeting, participants discussed editing a 9-page draft of the EC advice after hearing talks by invited statistics experts Joachim Schuz of the University of Mainz, Germany; Alessandra Brazzale of the Italian National Research Council, Padua; Hagen Scherb of Germany’s National Research Center for Environmental Health, Neuherberg; and Otto Petrowicz of the Technical University of Munich, Germany.

They discussed not only fundamentals but some fine points of statistical analyses used for EMF studies, including how to identify target populations, development of hypotheses and study questions, how to choose appropriate methods, the importance of planning for adequate statistical power, the use of proper tests for significance, how to guard against biases and confounders, and principles of interpreting findings in context. Many used examples from bioelectromagnetics research to illustrate their points.

Petrowicz summarized the discussion at the end of the day and proposed that COST281’s advice on statistics in bioelectromagnetics to the EC should include several strong statements about the responsibility of journals and scientists not to allow shabby statistics to stand without challenge. Journal editors should insist that peer reviewers pay more attention to the correct use of statistics than they have in the past, and research scientists should not mislead the public with statistics or exaggerate the importance of results in their public statements, Petrowicz said. “Passing on the findings with sensational hypotheses immediately to the public, in particular the media, represents irresponsible behavior,” Petrowicz wrote in the draft advice.

The proposed COST281 advice also points out that even well educated scientists sometimes lack knowledge about the correct use of specific statistical methods and they may not know all the limitations of a particular test or statistical method. Petrowicz proposes that the COST281 statement should stress, “It is not the statistical significance, but rather the practical relevance, that counts.”

If research scientists can sometimes fail to detect statistical problems, then it is not surprising that the public may not have a good grasp of what study results mean, Petrowicz’s draft points out. People may also be misled by self-appointed experts who “interpret results and statistical statements according to their points of view or their own purposes.” As a result, nonexperts may not be able to make a correct assessment, according to the COST281

statement, and may turn elsewhere “to make up its mind.” The COST281 advice therefore recommends that “the scientist has the ethical obligation to ensure that:

- The use of statistics is correct and corresponds to the present level of available knowledge,
- The interpretations of the findings only take into consideration valid conclusions—with all their uncertainties,
- That they do not underpin speculation with the aid of questionable incorrect findings, and
- That statistical decisions are not to be regarded as absolute statements, but rather as probabilities—with uncertainties that also have to be considered.”

“Even a highly regarded, very well equipped research institution with highly respected experts can produce false positive or false negative findings, depending on the question,” the statement adds. “The reason for this is chance. Responsible scientists are aware of this. They discuss their findings in their own working groups, compare their previous research results, try to reproduce the findings in their own laboratories, strive for interdisciplinary discussion or stimulate repeat studies in independent laboratories.”

To learn more about the COST281 Task Group on Statistics in Bioelectromagnetics, contact Petrowicz at otto.petrowicz@lrz.tum.de

IEEE’S COMAR EVALUATE MRI WORKERS’ SAFETY

In the December issue of *Health Physics* (89(6):684-689), the Institute of Electrical and Electronics Engineers’ (IEEE) Committee On Man And Radiation offer a Technical Information Statement “Exposure of Medical Personnel to Electromagnetic Fields from Open Magnetic Resonance Imaging Systems.” The authors include Howard Bassen of the US Food and Drug Administration, Jerry Bushberg of UC-Davis Medical Center, former COMAR chair Marvin Ziskin of Temple University, and Kenneth Foster of the University of Pennsylvania. Ruth Douglas Miller of Kansas State University was recently named the new chair of COMAR.

COMAR members summarized overall that “results of this study suggest that manufacturers and others who program or operate Open MRI systems should take care to ensure that operating parameters produce exposures that comply with the relevant exposure limits. Also, since field levels fall off rapidly with increasing distance, user practices may be implemented that reduce exposures significantly.”

With Open MRI, the article points out, medical personnel can be exposed to relatively high static, gradient, and RF fields compared to most other MRI systems. The authors calculated or used existing data to assess occupational exposure levels and compared them to relevant values specified in international exposure limits including those of the IEEE and the International Commission on Nonionizing Radiation Protection (ICNIRP). They found that workers’ head or torso exposure to gradient fields near the center of the patient-imaging area can exceed most exposure limits even for times less than a second. Further, exposures to RF fields can exceed limits if sustained exposures (minutes or more) occur to parts of the body.

—Janet Lathrop

BEMS WINTER WORKSHOP IS ON NONLETHAL EM INTERVENTION

Past President Bruce McLeod and organizers have announced that the title of the Bioelectromagnetics Society's Winter Workshop to be held on February 3 from 8 a.m. to 5 p.m. at the Embassy Suites, Tempe, Arizona, is "Exploring the Boundaries of Electromagnetic Field Intervention Techniques." The Winter Workshop is open to the public and there is no registration fee.

It is usual, when "EM fields" and "intervention" are used together, to automatically think "Non Lethal Intervention," McLeod notes. While nonlethal intervention (NLI) might call to mind only visions of anti-personnel devices, this workshop suggests that such a vision is not sufficiently broad. Electromagnetic fields from DC to light and beyond are being used in a variety of ways to intervene in targeted life processes with the goal of moving single cells, cell systems and entire organisms in some desired direction. In some cases, the goal is to encourage cells to grow (e.g., moving bone cells to return to the knitting of a non-union bone fracture) while in others, the goal is to slow or even kill cells (e.g., increasing the effectiveness of an antibiotic against a bacterial biofilm or increasing apoptosis in carcinoma cells). NLI does, as well, include the use of EM fields in anti-personnel devices.

The emphasis of the Winter Workshop is on discussion and feedback. An opening discussion session of 45 minutes will feature a panel presenting short views on the current and even potential NLI in the broadest sense. The challenge to the audience will be to listen, to review their own thoughts and positions, and to take part in the discussions that will follow the presentation of each speaker. They will discuss some of the newest EMF intervention at the cell level and what this research might mean to clinical applications in the coming years.

After introductory and welcoming words by Joe Salvatore, McLeod, with James Weaver, Rafael Lee and Salvatore will serve as a panel for the opening discussion, to be followed by three talks. The first is titled, "Flipping the phospholipid switch for phagocytosis—Targeting Cells or immune clearance with a nanosecond, remotely delivered, electrical signal," by Tom Vernier, a research scientist at Viterbi School of Engineering, University of Southern California.

The next speaker will be Bruno Marino, Vice President for R&D and Chief Science and Technology Officer, Aegis Industries Inc. His talk is entitled "Cells to Society: The impacts of stun devices." The final talk of the morning will be by Richard Nuccitelli of the Frank Reidy Research Center for Bioelectrics, Old Dominion University and BioElectroMed Corp., on "Nanosecond pulsed electric fields cause melanoma tumors to self-destruct."

The afternoon session will open with the panel leading an interactive discussion with the audience. Material from the morning sessions will still be fresh in everyone's mind and it is hoped that even though the morning discussions may have covered some of the questions and comments, the audience will also be aware that the material coming up in the afternoon will focus on "traditional" NLI. Anti-personnel NLI presents not only scientific and research issues, it also opens the door for posing complex social issues. Again, since discussion and feedback is the emphasis of the Winter Workshop, the audience will be challenged to make the effort

to become involved in all discussions.

Afternoon speakers and their talks include Robert Walker of the Stroger Cook County Hospital and Rush University Medical Center, Chicago, on "Physiological Effects of HIMI discharge;" and Casey Hathcock, senior research scientist at Avocet Polymer Technologies, Inc., speaking on "Recent developments in electromagnetic antipersonnel devices." James Jauchem of the Directed Energy Bio-Effects Division, U.S. Air Force Research Laboratory, San Antonio, Texas, will speak on "Studies of muscle contraction and blood factors in animals exposed to electromuscular incapacitating devices."

For information on attending the BEMS Winter Workshop, contact Executive Director Gloria Parsley, Tel.: +1 (301) 663-4252, FAX: +1 (301) 694-4948. E-mail: bemsoffice@aol.com. The meeting will be held at the Embassy Suites, 4400 S. Rural Road, Tempe, Arizona, USA 85282. Reservations 1-480-897-7444 or 1-800-362-2779.

MAGAZINE DESCRIBES EU MOBILE PHONE-HEALTH RESEARCH PLANS

A recent issue of RTD Info, the magazine on European research from the Information and Communication Unit of the EC Research Directorate-Général (DG), offered a special feature on mobile phones and health. It discusses the INTERPHONE study, the European Union's new science communication effort for decision makers known as EMF-NET, the GUARD program (possible effects of GSM cellular phones on hearing) to be followed by the EMFnEAR project, and *in vitro* research conducted by the REFLEX program. The EC Research DG report, "Mobile phones and health," in RTD Info 46:3-11 is available in English, French, and German on the Web at www.jrc.cec.eu.int/emf-net/publications.cfm

FGF, COST 281 Subtle Thermal Effects, Cont'd

heat than light: The difficulty of separating subtle effects of microwaves from subtle thermal artifacts," reviewed the more than 55 years of lessons from biophysics in this area. He suggested that the so-called positive RF "non-thermal" effects (below guideline limits) over the years have all fallen in the face of reality that they are due to subtle thermal effects. He pointed out in a detailed discussion of established effects the problem of how to experimentally distinguish thermal from nonthermal (field-dependent) effects. He concluded among other things that the temperature sensitivity of biological systems has led to immense difficulties in separating "thermal" from "nonthermal" effects.

Jacques Vanderstraeten of Microwaves UCL, Université Catholique de Louvain, Belgium, theorized about the "microwave SAR at the DNA-scale," in his talk. He and colleagues estimate that because of the special water structure in the immediate vicinity of nucleic acid molecules, at the nanoscale SAR value may be one order of magnitude above its value in tissues as a whole when these are considered at the millimeter scale.

See FGF, COST 281 Subtle Thermal Effects Continued, p9

FGF, COST 281 Subtle Thermal Effects, Cont'd

Later, Alciviades-Constantinos Cefalas of the National Hellenic Research Fndtn. (TPCI), Athens, hypothesized that the interaction and the coupling of nonionizing radiation with biological matter is taking place via "subtle-thermal" effects of interaction that are well described by quantum mechanics.

Anan Coptoy of Racah Institute of Physics, Hebrew University of Jerusalem, reviewed work he did with colleagues on the effect of localized microwave radiation and thermal heating on the green fluorescent protein in solution. Andreas Bitz of the University of Wuppertal discussed numerical and experimental determination of SAR and temperature distribution for *in vivo* experiments involving RF exposure in a session on animal and human volunteers.

Gunnhild Oftedal of Sør Trondelag University, Norway, then summarized experiments she and colleagues conducted on skin temperature during mobile phone calls, including a thorough review of the literature with reference to study methods, the factors causing heating, the emission variables and other influencing factors. Gernot Schmid of ARCS, Austria, reviewed studies of SAR and temperature elevation in the human head during RF exposure, drawn from human volunteer studies. He concluded overall that "at the usual exposure levels, it seems not to be possible to establish 'significant' RF induced *temperature hotspots* in the well-perfused tissues (e.g., brain). As long as there is no agreement on what extent of temperature elevation should be considered biologically relevant ('significant') some potentially sensible and so far not investigated (thermally somewhat 'isolated' and less perfused) organs should be taken into account for temperature analysis in future work. Current ongoing and future work concerns high resolution modelling of RF absorption in anatomically small head structures (eye, inner ear organs)."

Alexander Lerchl of the University of Bremen updated workshop participants on his laboratory's experiments in hamsters and mice with exposure to GSM- and UMTS-like signals.

In his talk, Jochen Buschmann of the Fraunhofer Institute of Toxicology, Germany, suggested that "we can extrapolate toxicology procedures to RF," and get information on worst-case scenario in humans relating to base station and cell phone exposures. He outlined the many steps of health risk assessment for these cases and concluded that "if the whole spectrum of studies does not show any adverse effects," we should "stop chasing phantoms." He reminded listeners that science cannot prove the absence of effects.

At workshop's end, Jürgen Kiefer, retired from the University of Geissen, chaired the final discussion. One conclusion from the extensive discussion was that it is frustrating to review this area because so many different RF signals were tested at so many different exposure levels, with many different exposure setups. In such a case, it is often not possible to compare results, and no strong final conclusions can be drawn about RF exposure levels in regard to health risks. On the other hand, this situation reflects real life—over the years, human RF exposure scenarios continue to change.

An Executive Summary of the FGF-COST 281 Workshop on Subtle Thermal Effects is available from organizer Gerd Friedrich, e-mail: info@fgf.de

— Sheila Johnston

RF Personal Dosimeter, Continued

Also, Mann et al. suggested that guidance could be developed for users to avoid inappropriate placement when the instrument is not being worn. With these and other changes, the dosimeter could lend itself to use in two broad applications with different technical requirements, the HPA testers point out. "First, the personal exposure meter could be used as a validation tool for exposure modeling techniques, in which case it only has to measure the field of individual signals from known transmitters," wrote Mann et al. Also, it "could be used as a tool to measure the total exposure of subjects to all RF signals, in which case it needs to sum the signals in the context of the chosen exposure metric."

Much of the HPA report describes the study design, protocols for spot and personal measurements.

Mann and colleagues began with laboratory investigations to characterize the meter's function, electrical properties, and responses to unmodulated signals, to UMTS handset and base station signals, FM radio, digital and analog TV signals, GSM 900 and 1800 MHz handset and base station signals, radar, and more. Then they launched a practical trial with 10 volunteers who wore the meter for seven days. Volunteers kept an activity diary for the week in which they carried the meter.

Mann et al. explain that they chose a recording interval of 2 minutes because it could be sustained for a week on a single full charge of the meter's battery.

The HPA authors said they felt it is an important omission that the dosimeter cannot evaluate TETRA radio, cordless phone (DECT), or wireless computer networking (WLAN) exposure. They recommend that "the performance of the personal exposure meter band filters should be improved, if possible, and appropriate measurement of the secondary carriers from GSM base stations should be addressed." They also suggested that meters used for investigations should be individually calibrated so that their readings are "traceable to appropriate standards with defined uncertainties," or that their specifications reflect a greater margin of error. They had several other changes to recommend, which they believe would improve the French dosimeter's performance. These include the way it handles multiple signals in the same band, placement of the battery too near the sensor which degrades isotropicity, and they recommend changes to reduce the chance that data are lost if the battery becomes discharged.

The HPA report, Publication HPA-RPD-008, "Personal dosimetry of RF radiation. Laboratory and volunteer trials of an RF personal exposure meter," by Mann SM, Addison DS, Blackwell RP, Khalid M. is available from the UK Health Protection Agency, <http://www.hpa.org.uk/radiation/>

— Janet Lathrop

FOURTH INTERNATIONAL EMF SEMINAR IN CHINA IS A SUCCESS

Growing worldwide interest in biological effects and exposure standards of electromagnetic fields was evident from the good attendance and high level of interest at the 4th International EMF Seminar on Electromagnetic Fields and Biological Effects, which was held in Kunming, China, from Sep. 12 to 16, 2005.

More than 90 scientists from across China plus 28 researchers and observers from other nations attended the Conference. This seminar was sponsored by the Ministry of Health of China and the World Health Organization, and organized by the Department of Radiation Medicine, Fourth Military Medical University. The Conference Proceeding collected 107 abstracts or full papers contributed by more than 90 scientists and researchers from all over the world, and covering nearly all the areas of bioelectromagnetics. The scientific program consisted of 47 oral presentations (distributed to 6 sessions) and the first meeting to discuss the possibility and necessity to establish an ACNIRP (Asian Commission on Non-Ionizing Radiation Protection) or other related scientific society.

Prof. Guozheng Guo, director of the Organizing Committee gave a welcoming address. Opening remarks were followed by invited lectures from Dr. Michael Repacholi, head of WHO EMF Project, Prof. Dariusz Leszczynski and other distinguished scientists. Then, the scientific program started with session on "Biological Effects and Health Implications of EMF" in the morning. In the next one and half days, 5 sessions, relating to "Biological Effects and Mechanism of EMF", "EMF Health Safety standards", "EMF Dosimetry and Health Safety standards", "Biological Effects and Dosimetry of EMF", and "Biological Effects of EMF". During the meeting, representatives from Asian countries, Dr. Michael Repacholi (WHO), and Mr. Shengli Niu (International Labor Organization) were invited to discuss how and when to establish ACNIRP, and finally reached a consensus that a scientific society such as Asian-Pacific Society for Bioelectromagnetics is more suitable, which will be discuss further in Korea meeting.

The 4th International EMF Seminar was prompted by the common understanding reached years ago by Chinese experts and experts from around the world to harmonize EMF standards in the future. It provided the important opportunity of narrowing the differences between the two sides and of displaying considerable progresses of biological effects of EMF that have been made in the labs of more than 10 countries and areas around the world in the past two years. The significant results yielded from this conference would certainly exert a positive influence on the scientific research in EMF fields and on the harmonization of EMF standards.

– by the Organizing Committee of Fourth International Conference on Electromagnetic Fields and Biological Effects In China

OPINION—The Editor in Chief Replies, cont'd

approved by the Board, I believe at their February, 2004, meeting.

“Was this Supplement peer reviewed, and if peer reviewed, how were the referees chosen and who did the choosing?”

The guest editors were Mike Repacholi, Emilie VanDeventer, Leeka Kheifets, and Richard Saunders. Papers presented at the meeting, except for those whose authors chose not to submit manuscripts and including two sets of authors whose results were summarized at the meeting by others, were divided among the guest editors. The guest editors chose peer reviewers and sent me, as Editor, the listing of who was to review each paper. For some papers, the guest editors asked me to suggest possible reviewers. When the list of reviewers, which included both people who had and people who had not been at the symposium, was complete, I looked it over and in a few cases suggested additional people, who were approached and generally agreed to review. The guest editors handled receiving reviews, requesting revisions, and making sure that the paper was in their opinion publishable. After that, I gave the papers a final editorial reading, seeking additional clarifications or changes in a few cases. I then sent accepted papers to be published. This is the same procedure used for previous supplements, including #6 (IEEE) and #5 (California Department of Health Services).

“Did the cost of this Supplement come from Journal dues, BEMS or WHO?”

All of the extra costs involved with the supplement were paid directly by WHO. The Supplement acknowledges the donors to the WHO EMF Project who supported the meeting and the proceedings. A minor exception to this statement is the secretarial time, postage, etc. spent on the Supplement in my office, which was paid from the Society's budgeted support of the editorial office.

“Were any payments made to the Bioelectromagnetics Society organization or to any member of BEMS to facilitate in anyway the publication of this Supplement?” and, “Were payments made to our Journal's Publisher, John Wiley and Sons?”

Since the Editor keeps as far as possible from the details surrounding payments associated with publications, I do not know whether WHO paid the Publisher directly for the costs involved with the Supplement or whether the Society office got the invoice, received payment and forwarded it to Wiley. (I get or want no information about page charges and reprint charges for regular articles and as little as possible about the details of special issue payments. All of these are handled by the Executive Director and/or directly with Wiley.) The Society received no payment in addition to whatever was billed by and forwarded to Wiley. I can think of no individual who received anything, whether money or in kind, in connection with publication of the Supplement, outside of WHO staff and my part-time secretary, who were working on it as part of their regular assignments. To the extent that Wiley's profit from the journal increased because of the supplement, the Society's year-end share of the profit will also increase, which most likely covering the extra secretarial time. All of the *Bioelectromagnetics* editors and editorial board members serve as unpaid volunteers.

Ben Greenebaum

Editor, *Bioelectromagnetics*

JANUARY ABSTRACT DEADLINE SET FOR BEMS 2006 ANNUAL MEETING

Monday, **January 9, 2006** is the abstract submission deadline for The Bioelectromagnetics Society's 28th Annual Meeting on June 11–15, 2006, at the JW Marriott Cancun Resort and Spa, Blvd. Kukulcan, Zona Hotelera Cancun, Mexico. Bruce McLeod is chair of the Technical Program Committee.

Original papers are invited for presentation in English on the interaction of biological systems with electromagnetic energy from static fields through the visible light frequencies. Areas of interest include, but are not limited to, the following: Clinical devices; medical applications; high-throughput screening; *in vitro* studies; *in vivo* studies; mechanisms of interaction; theoretical and practical modeling; instrumentation and methodology; dosimetry; occupational exposure; epidemiology; public policy.

The Technical Program will include plenary sessions, platform talks and posters, workshops, mini-symposia, a student paper competition, and exhibits. Authors should submit an abstract at <http://bioelectromagnetics.org/bems2006> Detailed submission instructions are available at www.bioelectromagnetics.org

EHE06 MOVES ABSTRACT DEADLINE

Organizers recently announced a new deadline for submitting abstracts to the EHE Conference in Madeira, Portugal next April. The submission date for summaries has been extended to 8th January, 2006. For more information see: www.apdee.org/ehe06 or contact Ângela Rodrigues at ehe06-secretariado@apdee.org

COST281 PLANS WORKSHOP ON SENSITIVE GROUPS

The deadline to submit an abstract to the European Cooperation in the Field of Scientific and Technical Research (COST) 281 committee is January 5, 2006, for the international conference on "Emerging EMF Technologies, Potential Sensitive Groups and Health" planned for April 20–21 2006 in Graz, Austria.

The conference is co-organized by ICNIRP, the WHO International EMF Project, EMF-NET, and Forschungsgemeinschaft Funk (FGF), Germany's Research Association for Radio Applications.

Organizers led by Prof. Dr. Norbert Leitgeb of the Institute of Clinical Engineering at the Technical University of Graz, announced that the workshop will focus on new and emerging technologies such as mobile telecommunications, "smart" communication systems, surveillance systems, dynamic antenna structures, telemedicine, "smart" clothes, and digital and interactive broadcasting, among other topics. Papers on health risk assessment and exposure assessment, numerical modeling of children, and on standards and exposure limits are also sought. For more information, see www.kht.tugraz.at/conference2006.html or contact Leitgeb by e-mail at Norbert.Leitgeb@tugraz.at

PHOTO MEMORIES OF DUBLIN



Physicists Stefan Machlup of Case Western University USA, left, Werner Sontag of Forschungszentrum Karlsruhe Germany, center, and Abe Liboff, retired from the University of Rochester, Michigan, USA, right, thoroughly enjoyed their reunion on the steps of Trinity College, Dublin, during the joint BEMS-EBA BioEM2005 Meeting, June 2005.



BEMS Board member Junji Miyakoshi, left, with colleagues Yoshiki Komatsubara and Tomohiro Sukarai, cheerfully allowed an interruption of their discussion in Dublin for the camera.

CALENDAR

January 5, 2006. Abstract Deadline. COST281 international conference, "Emerging EMF Technologies, Potential Sensitive Groups and Health." See April 20–21 2006 calendar entry.

January 8, 2006. Abstract Deadline for Conference on Electromagnetic Fields, Health and Environment—EHE06. See note on this page, or the April 27, 2006 entry.

January 9, 2006. Abstract Submission Deadline for The Bioelectromagnetics Society's 28th Annual Meeting. See article this page. Submission instructions available at www.bioelectromagnetics.org

January 11–13, 2006, 24th Scientific Conference of the Society for Physical Regulation in Biology and Medicine, "Stem Cells, Tissue Engineering and Regenerative Medicine." The NH Krystal Hotel, Cancun, MEXICO. Tel. +52 998 848 9800.

Calendar continued on p12

Calendar, Continued

Contact: Gloria Parsley, SPRBM Executive Director, 2412 Cobblestone Way, Frederick, MD, 21702 USA. Tel.: +1 (301) 663-4556; FAX: +1 (301) 694-4948, or Program Chair: Jeremy Mao e-mail: jmao2@uic.edu Or see: www.sprbm.org/

April 15, 2006. Abstract Deadline for 4th Workshop on Biological Effects of Electromagnetic Fields. Crete, GREECE. See Oct. 16 entry.

April 20–21, 2006. Technical University, Graz, AUSTRIA. COST281 Workshop, "Emerging EMF Technologies and Potentially Sensitive Groups." The focus will be on children, developing fetuses and people with chronic diseases, according to Norbert Leitgeb, Chair of COST281. See www.kht.tugraz.at/conference2006.html

April 27–29, 2006. Conference on Electromagnetic Fields, Health and Environment—EHE06. The Savoy Madeira Resort Hotel, Madeira, PORTUGAL. See: www.apdee.org/ehe06 Contact: ehe06-secretariado@apdee.org or watch www.apdee.org/ehe06

May 14–18, 2006. VALues in Decisions On Risk, VALDOR 2006. Stockholm, SWEDEN. VALDOR Symposia support the further development of transparent risk management. See article in this issue on page 10. See: www.congrex.com/valdor2006 for online registration and accommodation arrangements from October 6, 2005.

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. See <http://marriott.com/property/propertypage/CUNJW>

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 or justin.teissie@IPBS.FR or 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 or contact Ms Kitty Apostolou, Tel: +30 210 650 3129. Fax: +30 210 6532910. E-mail: conf2006@imm.demokritos.gr

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