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MICROWAVE NEWS • ISSN 0275-6595 •
155 East 77th Street, New York, NY 10075 •
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E-mail: <mwn@pobox.com> • Web:
<www.microwavenews.com> • Editor and
Publisher: Louis Slesin, PhD; Assistant
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Leonowich Dead at 53

August 1... John Leonowich died on May 21 in Las Vegas at the age of 53. He worked on both ionizing and non-ionizing radiation for the U.S. Air Force and the Battelle Pacific Northwest Labs. He was a member of the IEEE's standards committee C95 (ICES). At the time of his death, Leonowich was the radiation safety officer at the University of Nevada, Las Vegas. His **obituary** makes note of his "particular affinity towards Godzilla, collecting all sets of memorabilia... [he] even flew to Tokyo, Japan for the premiere of the new Godzilla movie."

"Physics Today" on Weak Electric Fields for Cancer Therapy

August 2... Physicists are taking notice of the new Israeli work showing that weak electric fields can be used to treat cancer (see our **June 15 report**). *Physics Today*, published by the **American Institute of Physics**, features a detailed **article** on the Israeli breakthrough in its August issue.

American Cancer Society Misleads on Cell Phone Risks

August 3... The **American Cancer Society** is misleading the public—while alleging that Americans are perilously ill-informed about cancer risks. Thanks to the ACS, the front page of this week's *Washington Post* **Health** section tells the 30% of the population who believe that "cell phones cause cancer" that they are "wrong."

The *Post* story was prompted by an ACS **news release** about a study that will soon appear in *Cancer*, a journal published by the ACS. The ACS team warns that, "A notable percentage of the participants in this study hold beliefs about cancer risk at odds with the prevailing scientific evidence."

Ironically, it is the ACS that is out of touch with the scientific evidence. As we have pointed out many times, there are now two different research groups which have found elevated risks of two different types of tumors on the side of the head the phone was placed after ten or more years of cell phone use (see for instance, our **January 22 news item**). Given these troubling findings, why is the ACS taking such a cavalier attitude towards a still uncertain, yet possibly very serious, cancer risk?

(continued on p.2)

One possible reason is that the survey on which the ACS builds its case is five years old. That was before the studies pointing to tumor risks were available. But this is no excuse. The absence of proof of a hazard is not the same as proof of safety. (We can almost hear the chorus of industry consultants chiming in, as they so often do, that you can never prove a negative. They're right in a general sense, but not about this. No one yet knows whether phones are safe. Not even the ACS.)

The ACS cites only one study to back up its claim that a cell phone cancer risk is an urban myth: the **Danish study** published last year. It's true that the Danish Cancer Society did not see a tumor risk, but it had no information on which side of the

head the phone was used by those surveyed. If laterality is a key variable, as it appears to be, the Danish study could not have seen a link.

Next week, the National Academy of Sciences is convening a **workshop** to identify research gaps in what is known about cell phone health effects. At a time when not a single experimental or epidemiological study is underway in the U.S., it is foolish indeed for the American Cancer Society to discourage further work on RF radiation. There are now close to 250 million users of cell phones in the U.S. (and over 2 billion worldwide). They need to hear the facts rather than industry-friendly blather from the cancer establishment.

At the National Academy of Sciences Workshop: More RF Health Research Unlikely

August 10... Don't hold your breath waiting for the U.S. to do more research on the possible health effects of mobile phones.

After sitting through two and a half days of briefings at this week's National Academy of Sciences **workshop** in Washington, we walked away thinking that it's unlikely that the academy's report, due by the end of the year, will put a high priority on initiating any new projects. The panel would have to make some strong recommendations to prompt action because, at the moment, the federal government has neither the will nor the money to revisit the RF-health controversy. For its part, the cell phone industry has long argued that it wants health research to come to an end.

Attendance at the meeting told the story. Other than the invited speakers and a couple of representatives from the federal agencies, just a handful of people bothered to show up. The wireless industry mostly skipped it—Motorola's Joe Elder was one of the few exceptions. The press also took a pass. Only three people spoke at the sessions reserved for public comments; two raised concerns over phone towers. The third, Dave LeGrande of the Communications Workers of America, addressed occupational health risks. None of the comments from the floor made a case for more studies on cell phones.

America's declining standing in RF research was apparent by who was invited to speak at the workshop. Of the 19 presentations, only seven were from the U.S. In contrast, Finland, with a population of just over five million, contributed two speakers, as well as one of the panel members.

If no new projects are recommended and funded, the only RF research that will be carried out in the U.S. in the foreseeable future would be the animal studies sponsored by the National Toxicology Program. These were first put on the agenda eight

years ago, and the actual cancer experiments are scheduled to get underway about a year from now. This is a major effort, costing a total of \$22 million. About a third of this has already been spent on building the exposure systems, according to David McCormick of ITRI in Chicago. He is the running the study and is also a member of the NAS panel. Some at the meeting privately questioned whether we should be putting all our research funds in one basket.

The one wild card that could change this bleak research outlook is the long-delayed **Interphone study**. Two epidemiologists who are working on Interphone spoke at the meeting, but both were tight-lipped about the results. In separate interviews, they each refused to say anything about the observed long-term risks. Dan Krewski of Canada's University of Ottawa predicted that the Interphone paper would be out by the end of the year, while Anssi Auvinen of Finland's Tampere School of Public Health suggested that next year was more likely. Neither would say what is holding up its release, though it is becoming clear that the disagreements within the Interphone study team are about more than just copyediting.

If the final paper were to reinforce the already-published partial results, which point to a higher incidence of brain tumors and acoustic neuromas among those who have used phones for more than ten years (see for instance our **January 22 news item**), the current agenda could well be revised. As FDA's Abiy Desta, who helped organize the meeting, told us, "All interested parties will pay attention to Interphone."

Bioinitiative Challenges EMF Exposure Standards

August 29... An international group of researchers has thrown down the gauntlet. The Bioinitiative Working Group is challenging the EMF power structure to set much stricter exposure standards for power lines, cell phones, cell towers and other sources of electromagnetic radiation.

“‘Business as usual’ is unacceptable,” says David Carpenter, the director of the **Institute for Health and the Environment** at New York’s University of Albany, on releasing the working group’s extensive report. Its general conclusion is that there are many biological effects at levels that are well below current standards and that the “existing safety limits are inadequate to protect public health.” Carpenter and **Cindy Sage**, a consultant based in Santa Barbara, CA, coordinated the Bioinitiative group and edited the report.

Among the group’s key recommendations are:

- a 1 mG limit for homes where children and/or pregnant women live;
- a “precautionary limit” of $0.1 \mu\text{W}/\text{cm}^2$ ($0.6 \text{ V}/\text{m}$) for RF exposures where “people live, work and go to school.”

These proposed levels are on the order of 1,000 times more stringent than current limits adopted by **ICNIRP** and the IEEE’s **ICES**.

In addition to Carpenter and Sage, the contributors to the report are: Carl Blackman, Martin Blank, Guangdi Chen, Zoreh Davanipour, David Gee, Lennart Hardell, Olle Johansson, Michael Kundi, Henry Lai, Kjell Hansson Mild, Gene Sobel and Zhengping Xu. All 21 sections of the report are available as free downloads from the **Bioinitiative** Web site.

Will those responsible for developing EMF policies on both the international and national levels now review the Bioinitiative’s findings and engage in a dialogue over what the appropriate exposure limits should be? Or will they simply ignore them and continue with business as usual? We think we know the answer, but we’re ready to be surprised.

French Interphone Results: “General Tendency” For Greater Glioma Risk Among Long-Term Users

September 19... The French Interphone results are out and they are not reassuring.

The French study team, which includes Elisabeth Cardis, who is in charge of the overall **Interphone** project, has found high rates of brain tumors (gliomas) among heavy cell phone users. It’s not a significant result, statistically speaking, but what is noteworthy is that this excess was apparent regardless of the way a heavy user was defined. As the researchers themselves put it: There is a “general tendency” for a greater glioma risk for “long-term users, heavy users [and] users with the largest numbers of telephones.”

For example, those who owned more than one cell phone had twice the risk of getting a glioma, as did those who had used a cell phone for the longest period of time (over about four years). Those who were on a cell phone for the longest total amount of time (260 hours or more) had 80% more gliomas, about the same increase as those whose average cell phone call lasted the longest (over five-and-a-half minutes). And those who had made the most phone calls (over 5,100) had about 50% more gliomas. In each category, the heaviest user had the highest risk.

There was no elevated risk for the two other types of brain tumors under study, meningiomas and acoustic neuromas.

If the French results hold up, it would indicate that cell phone-induced brain tumors can develop more quickly than cur-

rent hypotheses suggest. Combined analyses of the Interphone data from five European countries—Denmark, Finland, Norway, Sweden, U.K.—point to a latency of ten years or more for both **acoustic neuroma** and **gliomas**. And while a second team led by Sweden’s Lennart Hardell and Kjell Hansson Mild have **reported** a ten-year latency, some of their earlier papers have pointed to shorter latencies (see for instance this **2003 paper**).

The new study couldn’t shed any light on ten-year tumor risks because the French took to cell phones relatively late. The researchers note that in 1995, five years before the Interphone project began, only 12% of the French population had a mobile phone. As a result, the study included only four individuals with any of the three types of brain tumors among the 350 cases and 455 controls who had used a cell phone for more than ten years. (By comparison, close to 70% of the French population has a cell phone today.)

To be sure, the French Interphone study is limited by the small number of people in the high exposure groups, but it provides yet another “**slight hint**”—the phrase (euphemism?) used last week by Lawrie Challis—that we may have a major public health problem brewing. Challis, the head of the U.K. **mobile phone health research program**, was referring to the current state of knowledge upon the release of his latest progress **report**.

The French team is delaying drawing any conclusions until the release of the complete Interphone results with the combined data from the 13 participating countries. That paper is already years late. The rest of us have no choice but to wait along with them, but this continuing series of “hints” is getting harder and harder to ignore.

The French paper was posted on the Internet on September 10 and will be published in an upcoming issue of the *Revue d'Épidémiologie et de Santé Publique* [Epidemiology and Public Health]. The paper is in French with an abstract in both French and English.

Swiss To Host Workshop on Dosimetry and Epidemiology

September 24... The Swiss National Research Program on Non-Ionizing Radiation (NRP57) will hold a one-day workshop, *Dosimetry Meets Epidemiology*, on January 11 in Zurich. The focus will be on exposure assessment in EMF epidemiology. Anders Ahlbom, Jørgen Bach Andersen, Alexander Borbély,

Elisabeth Cardis and Yngve Hamnerius, all members of NRP57's steering committee, will chair the three sessions. Among those on the program are Joe Bowman of U.S. NIOSH, Niels Kuster of IT'IS, Mike Kelsh of Exponent and Martin Röösli of the University of Bern. There is only room for 60 attendees and we are told that half the spots are already taken. For more information, contact Christian Mottas at the Swiss National Science Foundation.

Birds May See Earth's Magnetic Field

September 26... Birds may actually be able to ‘see’ a magnetic field. This is the fascinating and surprising conclusion of a group of German scientists who have been studying migratory birds. Not everyone is yet convinced that garden warblers can visualize the geomagnetic field (see today's news item on Nature.com), but the new German paper reminds us how little about we know about how living systems interact with electromagnetic signals.

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