

when they are evaluated and compared. Experimental conditions have to be chosen and written up in such a way that others will be able to reproduce the experiment so that the same results can be obtained. Demanding reproducibility ensures the quality of scientific research because a hypothesis is only considered valid when its experimental results have been repeatedly reproduced and not proven to be random occurrences.

Results are comparable when they are obtained under the same framework conditions. In the field of biology, for example, the cell lines, mediums, and any other relevant parameters used in an experiment must be identical.

A good research strategy is what the Forschungsgemeinschaft Funk e.V. has been successfully doing for years, and that is the policy that knowledge has to have a broad basis. By conducting studies in five fields, namely molecular, single cells, cell clusters, animals and epidemiology an abundance of data is produced. Every experimental set-up, experimental strategy, measurement values, and conclusions are critically questioned and evaluated by experts and the findings are carefully checked with replication studies. When science is consulted as the basis for value limits or for determining safety limits than high quality standards for the research required is a mandatory prerequisite. Only when the methodology is anchored in a sound foundation, is the knowledge that is built upon this foundation valid and sound.

Gerd Friedrich  
Forschungsgemeinschaft Funk



### Students learn about electromagnetic fields in the environment

On June 17, 2003, the FGF together with the chair for High Frequency Technology at the University of Stuttgart invited the 10<sup>th</sup> grade students from the Erasmus-Widmann Gymnasium Schwäbisch Hall to attend an informative lecture focusing on "EMCE". The pupils are participating in a project with the newspaper Frankfurter Rundschau called "Newspapers in Schools". After a short theoretical introduction, the focus was on interactive team work.

The students, under the direction of experts, were very much involved in being informed about a broad spectrum of sub-

jects. The agenda did not only focus on technology, biology, environmental medicine or on government precautionary principles and risk communication, but also on research operations at the university and how a research project is planned and realized.



# News



In order to take a break from the theoretical side of the presentation, the students could actually experience close-up a presentation of a research project that was recently completed by the FGF, and the highlight of the day was visiting a laboratory and seeing the practical side of an experimental set-up.

At the end of the day the students were given a presentation of the latest radio technology, e.g. a spacing warning system in a luxury car.

In German class the students will write up all the new information they gathered in a whole-page newspaper article, which will appear in the Frankfurter Rundschau within the framework of the project, "Newspapers in School".

## **Invitation to join a task force which will investigate possible genotoxic effects associated with weak electromagnetic fields used in radio communication systems.**

In a number of studies some of the results which have been published are contradictory regarding possible genotoxic effects which could occur in conjunction with the weak electromagnetic fields used in modern radio communication systems. In order to shed some light on the controversial debate which resulted from these findings, an international conference was held by the Forschungsgemeinschaft Funk on possible genotoxic effects from mobile radio fields on the 25-27 of November in Löwenstein near Stuttgart. The experts who attended this conference recommended that a large-scale international meta-study be conducted where experienced cytogeneticists from several leading research centres in different countries would investigate human peripheral lymphocytes using the same procedures. The cells would be exposed *in-vitro* under strict conditions to weak RF-fields. Human fibroblasts cultures were proposed as a second cell type.

This proposal was accepted by COST 281 and was integrated as a task force into a programme that is already underway. The coordinator of the task force is Luc Verschaeve. COST 281 is requesting any experts and institutions interested in the task force to participate. The first step

is to determine an investigation protocol which all of the participants agree to and to especially address the following questions:

- the type of biological system
- endpoints of the investigation
- analytical method
- exposure conditions
- dosimetry
- dosage dependency
- tests for thermal and non-thermal mechanisms
- statistical requirements

The next step is apply for the necessary research funds on a national, European, and international level. Those interested should directly contact the coordinator of the task force:

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## **International WHO EMF-Project**

As it has done every year the international EMF Project of the World Health Organization (WHO) invited representatives from all over the world to scientifically find a position on the estimation of risks when using electric, magnetic and electromagnetic fields (EMF). Along with government representatives, sponsors and representatives from other organizations there were also scientists representing various subject areas.

In three consecutive rounds of talks attempts were made to respond to the different formulations and areas of interest.

# News

The WHO's three-day conference took place this time from the 9-13 of June in Geneva.

At the eighth meeting of the **International Advisory Committee on Electromagnetic Fields (IAC)** the participants were informed about the latest findings and ongoing projects of the different national and international research programs. The first progress report on a WHO-risk estimation concerning static and low frequency fields is in the preparation phase. The participants also discussed the "framework for the harmonization of EMF-standards for the frequency ranges of 0-300 GHz". One subject, among others, was establishing uniform criteria for evaluating research, for developing guidelines, as well as the harmonization of terminology in the field of EMF. The WHO presented for discussion several leaflet designs on the health aspects of EMF, which were critically reviewed by participants. Furthermore, the WHO informed the participants about measures being taken concerning the development of the precautionary principle. The proposals which have been worked out will be presented soon and will be the basis for the case studies concerning open questions relating to the subject of EMF.

Within the framework of the "RF Research Review Meetings", the WHO-research program from 1998 was the starting point for an evaluation or a continuation of the research projects started by

the WHO. The experts who were invited worked out, in some very controversial discussions, key research areas for short and long-term studies. In the "WHO Research Agenda" the WHO has defined the general and primary goals for the "International EMF Project". It also contains guidelines for quality standards for conducting studies. At the time of the conference there were almost 200 studies published by the WHO recorded in its data bank, and another 65 studies are currently being carried out.

Within the framework of the following two-day **Research Coordination Meetings** different national and international organizations presented their research programs. National programs were presented by Great Britain, France, Germany (among others, the BfS and the FGF programs), Finland, Japan, China, Italy and Australia. Representative from other supranational programs presented their research activities for the following programs EU-REFLEX, COST 281, CTIA/US FDA, MMF and GSM-Association. Another theme based on suggestions made by experts participating in the meeting was determining a new WHO research program. The new WHO research agenda will be presented soon to the public at large. Further information concerning the International EMF project can be found at the following Internet address: <http://www.who.int/emf/> .

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