HEALTH PROTECTION AGAINST NON-IONIZING RADIATION:

PRINCIPLES AND PRACTICES

- The ICNIRP view -

Maria Feychting

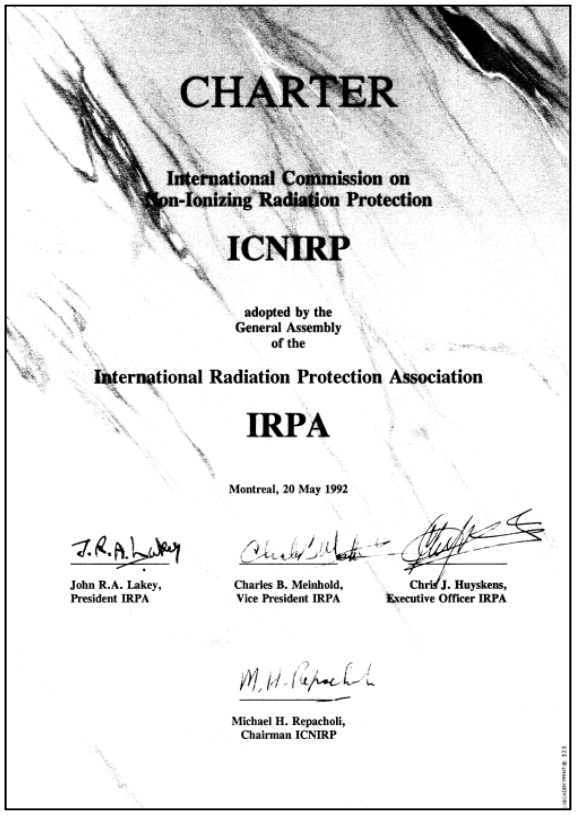
Courtesy of

Dr. Gunde Ziegelberger

ICNIRP Scientific Secretary

What is ICNIRP?

- **independent group of experts** (on a voluntary basis) - **members are not affiliated with commercial or industrial enterprises**
- **multidisciplinary**
- **balanced in terms of geography and gender**
- **emanated from IRPA/INIRC in 1992**
- **formally recognized by WHO and ILO, further relationships with other international organizations** (WMO, EC, CIE, ICOH, IEC,…)
- **registered not-for-profit**



CHARTER

International Commission on
Non-Ionizing Radiation Protection

ICNIRP

adopted by the
General Assembly
of the

International Radiation Protection Association

IRPA

Montreal, 20 May 1992

John R.A. Lakey,
President IRPA

Charles B. Meinhold,
Vice President IRPA

Chris J. Huyskens,
Executive Officer IRPA

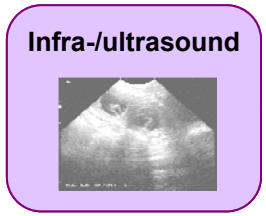
Michael H. Repacholi,
Chairman ICNIRP

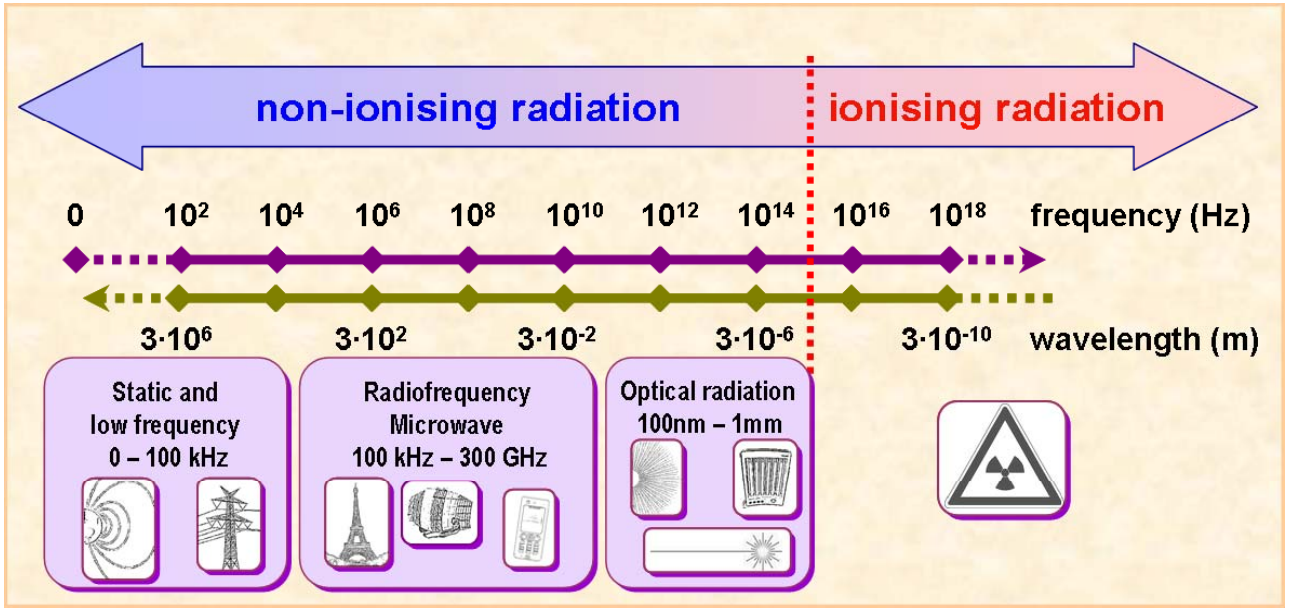
ICNIRP´s mission

- **to provide guidance and advice on the health hazards of NIR**
- **to develop science-based guidelines on limiting exposure to NIR**
- **to focus on people** (general public, workers, patients) **and the environment**

not adressed:

- product standards
- measurement techniques
- compliance testing
- interference with medical devices
- risk management approaches such as precaution





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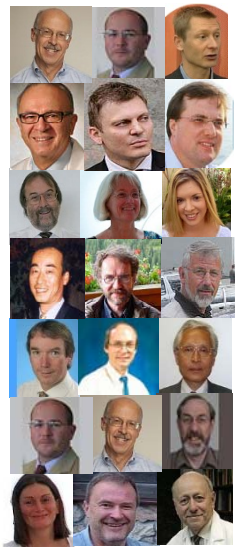
Broadening the expertise…..

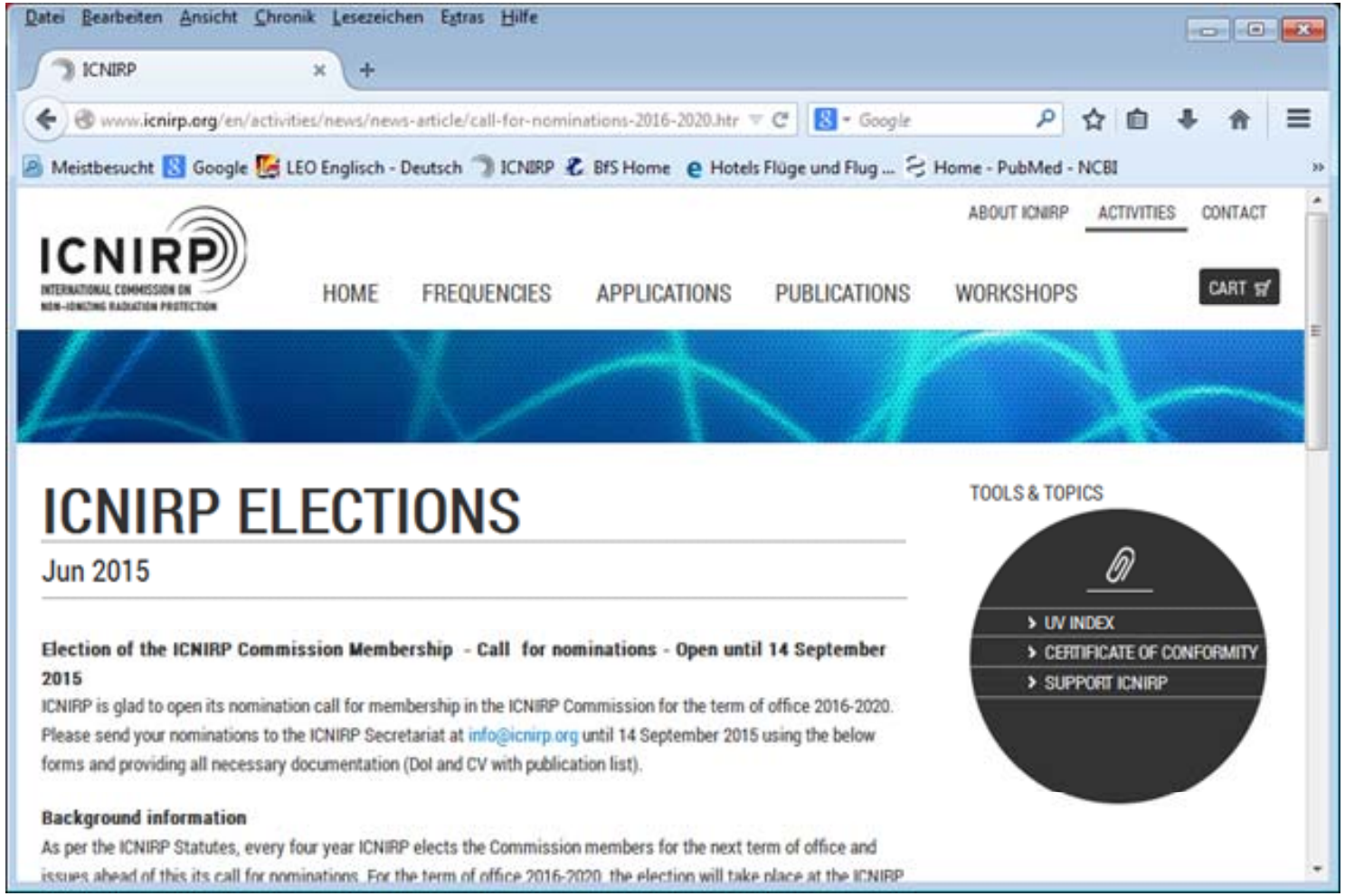
ICNIRP
INTERNATIONAL COMMISSION ON
NON-IONIZING RADIATION PROTECTION

ICNIRP
(main commission)
final responsibility

Scientific Expert Group

Project Groups

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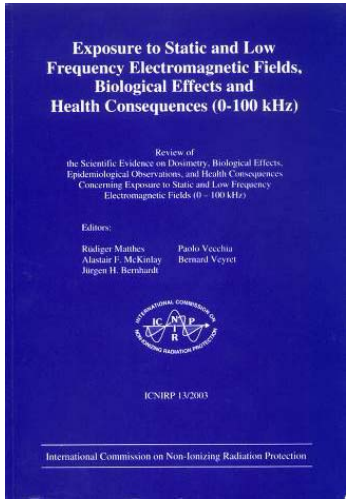
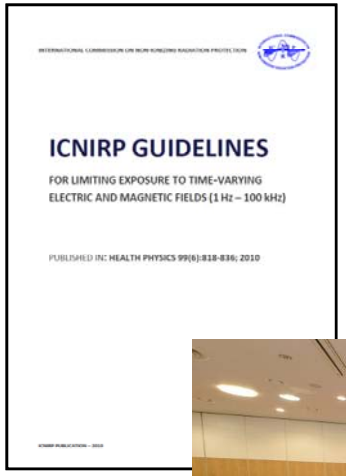
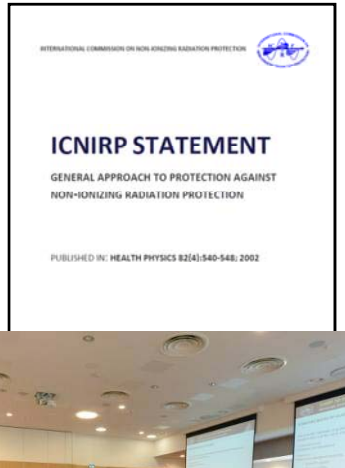
CART
ICNIRP ELECTIONS
Jun 2015
Election of the ICNIRP Commission Membership - Call for nominations - Open until 14 September 2015
ICNIRP is glad to open its nomination call for membership in the ICNIRP Commission for the term of office 2016-2020. Please send your nominations to the ICNIRP Secretariat at info@icnirp.org until 14 September 2015 using the below forms and providing all necessary documentation (DoI and CV with publication list).
Background information
As per the ICNIRP Statutes, every four year ICNIRP elects the Commission members for the next term of office and
TOOLS & TOPICS
UV INDEX
CERTIFICATE OF CONFORMITY
SUPPORT ICNIRP

ICNIRP activities



reviews

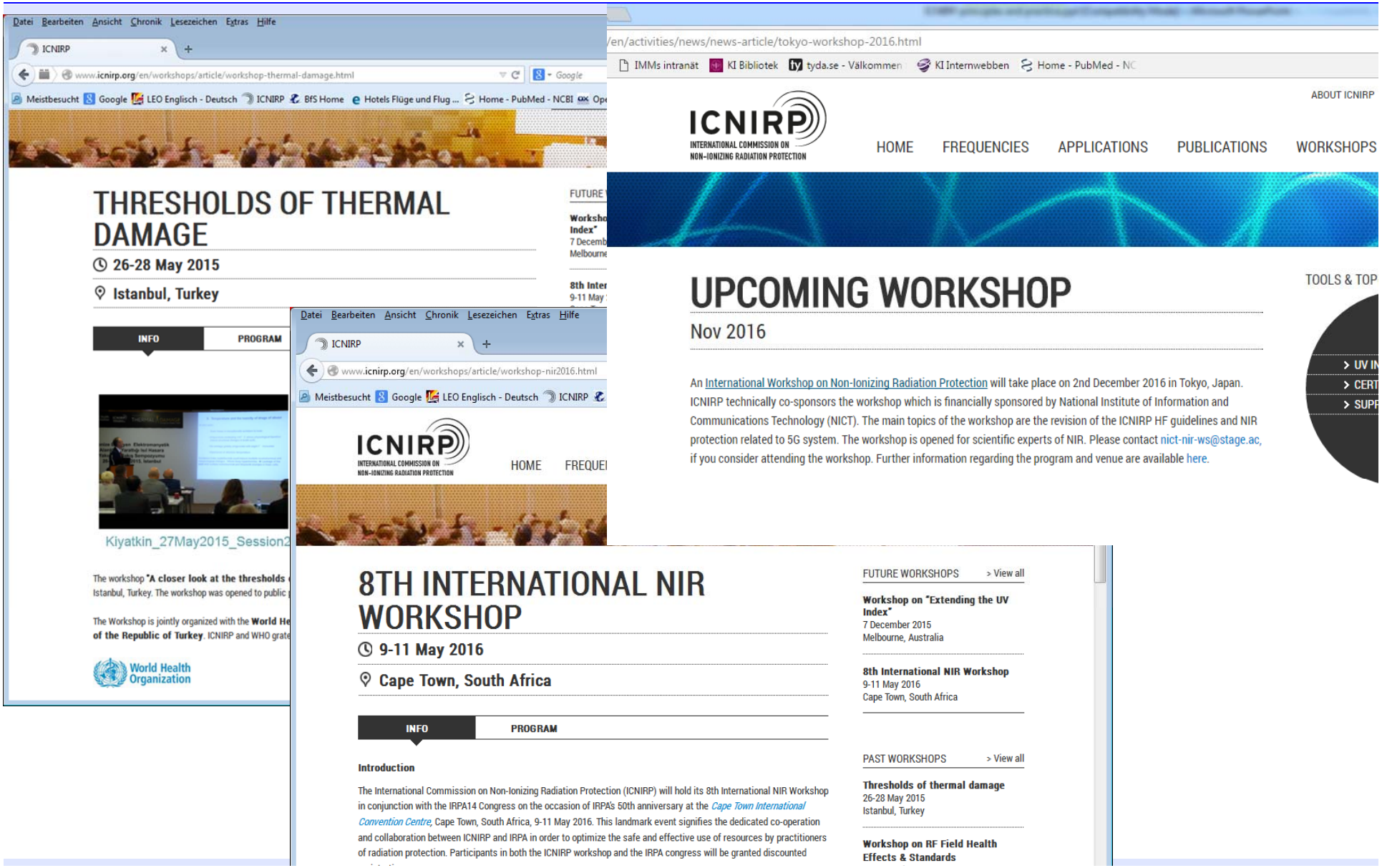




open workshops:
- to inform the public, etc.
- to get scientific input

www.icnirp.org

ICNIRP
INTERNATIONAL COMMISSION ON
NON-IONIZING RADIATION PROTECTION

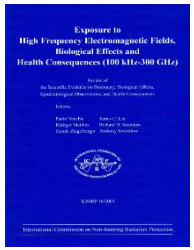


Guidelines - Sequence of actions (using RF as an example)

1. **Identification of gaps in knowledge resulting in a research agenda:** last time for RF in 2010

2. **National research programmes**

3. **Synthesis of overall knowledge:**
   comprehensive reviews by ICNIRP (Blue Books)
   (and other national radiation protection authorities)



4. **Evaluation of carcinogenicity:**
   IARC Monographs (for RF in 2012)

5. **Overall evaluation of health hazard:**
   EHC-Document open consultation is closed
   Working group expected in 2017

+ additional experts

6. **Revision of recommendations:**
   (can be expected in 2017)

Fundamentals of ICNIRP Guidelines

- **Procedures and criteria are defined *a priori***
- **Recommendations are based on science -**

  no consideration for economic or social issues
- **Only established effects** (replicated and/or consistent across different study designs) **are considered**

Not to forget (not specific for EMF, but intrinsic to science):
- evidence ≠ proof
- biological effect ≠ health effect
- statistical association ≠ causality
- no single study design can prove the absence of a health risk
- fear can cause health problems

Steps in the development of guidelines

- **review of the scientific literature (**peer-reviewed studies)
- **establishment of health-related effects**
- **identification of the critical effect** (health effect that occurs at the lowest level of exposure)
- **considering reduction factors**
- **setting basic restrictions** (in RF-range: specific absorption rate (SAR) that ensures that no health effects occurs), *difficult to measure*
- **derivation of reference levels** (under worst case scenarios; compliance with reference level ensure compliance with basic restrictions), *easy to measure*

Current state of knowledge

- **nerve-stimulating and thermal effects are the critical effects in the ELF and RF-range, respectively**
- **these effects are acute in nature**
- **they occur above a certain, well-known threshold** (ICNIRP´s exposure limits aim at preventing the critical effect)
- **so far, no long-term health effects due to ELF and RF-exposure are established**

Many thanks for your attention!