

The W.H.O. documents “Prudent Avoidance” as an adequate precaution to cost effectiveness on the whole but “Preventable Exposure” applied to all available situations will have exponential savings with cost to corporations and consumers health and quality of life for communities.

The **precautionary principle** or precautionary approach states if an action or policy has a suspected risk of causing harm to the public or to the environment in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is *not* harmful falls on those taking an action.

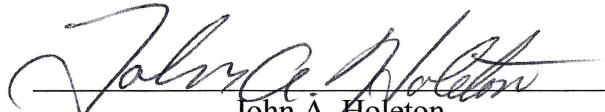
The principle is used by policy makers to justify discretionary decisions in situations where there is the possibility of harm from taking a particular course or making a certain decision when extensive scientific knowledge on the matter is lacking. The principle implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation

Please see the attachment “WHO The Precautionary Principle and EMF”.

Relief is requested.

Due to the fact there are no long term scientific studies on this new concept of “Cumulative Effect” for the “General Population” I ask the FCC to rescind the use of “Thermal Based Radiation” as a qualifying standard for corporations whom mandate consumers to be exposed to possible harm by their products or services.

Sincerely



John A. Holton

Individual Rights; Nancy Naylor Comments, Sep. 2, 2013

Comments on Notice of Inquiry, ET Docket No. 13-84

Submitted by Nancy Naylor 9/2/2013

nnaylor@rocketmail.com

Springboro, OH

I am writing to express my concern over the current exposure guidelines for radio frequency and microwave radiation. I am hopeful that these guidelines will soon change in favor of protecting the American population. I feel passionately about this because my daughter has autism. I was unaware of the effect that the RF/MW that was constantly around her could have. I have since found that many of the biological effects of wireless radiation are very similar to the biological markers found in people with autism. The table below outlines these similarities. The studies references are listed at the end of this letter.

Non-ionizing Microwave Radiation	Autism Spectrum Disorder
Leaking Calcium Ions Hypocalcemia (Goldsworthy 2007) [1]	Boys with autism and autism-spectrum-disorder (ASD) are at higher than normal risk for thinner, less dense bones when compared to a group of boys the same age who do not have autism. (NICHD 2008) [2] It has been speculated that this is due to the casein-free diet that many ASD children are put on; however, this has not been speculation at this point.
Weakened Blood-Brain-Barrier (Salford 2007) [3]	Peptide molecules, which come from the proteins of gluten and casein products, result in opioid activity in the brain because they pass into the brain via an opened blood-brain-barrier. (Shattock 1991) [4] This also may explain how the toxins in the

	environment (or injected into the blood stream) may pass through the blood-brain-barrier and affect the child's nervous system.
DNA damage – increase in the single- and double-strand breaks of DNA (Lai, 1994) [5]	DNA damage and genetic mutations carry a substantial susceptibility to autism. (Weiss, 2008) [6]
Impairment of the immune system (Johansson, 2009) [7]	Antibodies found in the blood of autistic children suggest an abnormal immune response is common. (Stern, 2005)[8]
Decrease in the production of melatonin (Arnetz, 2007)[9]	Biochemical analyses performed on blood platelets and/or cultured cells revealed a highly significant decrease in melatonin level ($P=3 \times 10^{-11}$) in individuals with ASD. (Melke, 2008) [10]
Increase in apoptosis (Joubert, 2008) [11]	Studies indicate that the autistic cerebellum may be vulnerable to pro-apoptotic stimuli and to neuronal atrophy as a consequence of decreased Bcl-2 levels. (Fatemi, 2003) [12]
Decrease in levels of glutathione (Mittur 2000) [13]	Studies have shown levels of the antioxidant glutathione are typically about

	50 percent lower in children with autism. (Kern 2006) [14]
Increased oxidative stress (Adey 1993) [15]	Convincing data demonstrate greater oxidative stress in groups of children with autism, as compared to controls. Oxidized biomolecules in blood (lipid peroxides in both red-cells and serum) and urine (isoprostanes) are significantly elevated in autism. The autistic brain has significantly increased levels of lipofuscin after age seven, and a more specific oxidative marker is found in cortical dendrites in even younger subjects. (McGinnis 2005) [16]
Mitochondria Dysfunction has been shown to be induced by exposure to microwave radiation. (Schmitz 2004) [17]	Biomarkers for mitochondrial dysfunction have been identified in many cases of autism and are believed to contribute to diagnostic symptoms including: cognitive impairment, language deficits, abnormal energy metabolism, and chronic gastrointestinal problems. (Rossignol, 2011) [18]
Electromagnetic fields – like those emitted by cell phones – have been shown to alter regional cerebral blood	In conditions like autism and chronic fatigue syndrome (CFS) it has been shown via SPECT (Single Photon Emission Computed

flow. (Huber 2005) [19]	Tomography) scans that there is a decreased flow of blood to the brain. (Gillberg, 1993) [20]
EMF produces pronounced changes in the molecular structure of hemoglobin and induced force acting on the charged particle of charge which may activate rouleau formation (an aggregation of red blood cells in a roll formation.) (Baieth 2008) [21]	Thrombophilia, a coagulation disorder, was found in 70% of the children with autism, and in many of the parents. (Bradstreet 2001) [22]
Reduced dopamine levels in PC12 cells exposed to low frequency electromagnetic fields (Opler 1997) [23]	Plasma and urine concentrations of homovanillic acid, a dopamine metabolite, have been reported abnormal in those with autism. (Ernst 1997) [24]
Wireless radiation leads to deaminization of amino-acids and thereby causes disturbance of ammonia utilization by the body. (Tamasidze 2007) [25]	Elevated ammonia is common in autism. A study of 65 children with autism found that 70% had levels above the reference range of the lab. (Bradstreet 2001) [22]
In an experiment on rats the concentration of serotonin was elevated in the hypothalamus of male rats after 1 month of EMF exposure. (Chance 1995)	Whole blood serotonin concentration were found to be significantly higher in drug-free autistics than in typical persons. (Anderson

[26]	2006) [27]
In a Russian study of workers exposed to HF and microwave range (3 and 10 cm) EMF, the incidence of gastrointestinal tract diseases significantly increased with the increase of EMR exposure duration. (Nikitina, 2000) [28]	There is a high prevalence of gastrointestinal symptoms in children with autistic spectrum disorder. (Horvath 2002) [29]

We do not know with certainty if RF/MW exposure is the cause of her autism, but with a growing incidence of autism in children and no answers as to why it is growing so quickly, we should be proceeding with caution. The next generation depends on us. There is significant research here for us to be concerned. Implementing better guidelines will help us use modern technology while minimizing the effects on human health.

Guidelines for power density values should be based on RF/MW exposure guidelines that protect from nonthermal health effects. Current guidelines only allege to protect for thermal heating. FCC's power density value should be lowered from 1,000 uW/cm² to 0.0003 uW/cm².

Ref. THE BIOINITIATIVE REPORT 2012 A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Fields (ELF and RF) <http://www.bioinitiative.org/>

Regulations should use only electric field based power density values for the RF/MW exposure standards and stop using Specific Absorption Rate(SAR) which only measures heating effect.

Moreover, safety standards need to be more conservative for special populations, including pregnant women, children the elderly and people with illness or autoimmune conditions.

THE BIOINITIATIVE REPORT 2012 A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Fields (ELF and RF)

<http://www.bioinitiative.org/>

and Evaluation of Specific Absorption Rate as a Dosimetric Quantity for Electromagnetic Fields Bioeffects <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0062663>

The EPA must continue its non ionizing radiation protection research program for developing safe RF/MW exposure guidelines. The FCC is charged with promoting wireless technologies. The FCC cannot be objective when setting regulation standards of RF/MW radiation. Furthermore, only a health agency (which the FCC is not) has the expertise to evaluate the science on RF/MW exposure.

It is irresponsible to encourage and facilitate the expansion of Wi-fi and other wireless radiation which results in the involuntary exposure to RF/MW. The research is showing us that there are health effects. People should not be required to be exposed for RF/MW just to get an education or live in a community. Our regulations should give weight to science and the precautionary principle.

Sincerely,

Nancy Naylor

References

[1] **Goldsworthy A.** (2007). "The Biological Effects of Weak Electromagnetic Fields: What the power and telecom companies would prefer us not to know." *Electromagnetic Fields*, 2007.

http://www.radiationresearch.org/pdfs/goldsworthy_bio_weak_em_07.pdf

[2] **National Institute of Child Health and Human Development (NICHD).** "Thin Bones Seen In Boys with Autism and Autism Spectrum Disorder."

http://www.nichd.nih.gov/news/releases/thin_bones_in_autism_012908.cfm

[3] **Salford LG, Nittby H, Brun A, Grafström G, Eberhardt JL, Malmgren L, Persson BRR.** Non-Thermal Effects of EMF upon the Mammalian Brain: the Lund Experience. *The Environmentalist*, 2007 pp. 493-500.

[4] **Shattock P, Lowdon G.** "Proteins, Peptides and Autism Part II: Implications for the Education and Care of People with Autism" *Brain Dysfunction*, (1991) 4:(6) pp. 323-334.

[5] **Lai, Henry; Singh, Narendra P.** Acute low-intensity microwave exposure increases DNA single-strand breaks in rat brain cells. *Bio-electromagnetics*. 1995. pp. 207 – 210.

[6] **Weiss LA; Shen Y; Korn JM; Arking DE; Miller DT; Fossdal R; Saemundsen E; Stefansson H; Ferreira MA; Green T; Platt OS; Ruderfer DM; Walsh CA; Altshuler D; Chakravarti A; Tanzi RE; Stefansson K; Santangelo SL; Gusella JF; Sklar P; Wu BL; Daly MJ** Association between microdeletion and microduplication at 16p11.2 and autism. *The New England Journal of Medicine*, 2008 pp.667-75.

[7] **Johansson, Olle.** Disturbance of the immune system by electromagnetic fields – A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment. *Pathophysiology*, 2009 pp. 621-642.

[8] Stern, L; Francoeur, MJ; Primeau, MN; Sommerville, W; Fombonne, E; Mazer, BD. Immune function in autistic children *Annals of allergy, asthma & immunology*, 2005 pp. 558-65.

[9] **Arnetz, B; Akerstedt, T; Hillert, L; Lowden, A; Kuster, N; Wiholm, C.** The Effects of 884 MHz GSM Wireless Communication Signals on Self-reported Symptom and Sleep (EEG)- An Experimental Provocation Study. *PIERS Online*, 2007 pp: 1148-1150.

- [10] **Melke, J; Botros, H.G; Chaste, P; Betancur, C; Nygren, Anckarsäter, GH; Rastam, M; Ståhlberg, O; Gillberg, IC; Delorme, R; Chabane, N; Mouren-Simeoni, M-C; Fauchereau, F; Durand, C M; Chevalier, F; Drouot, X; Collet, C; Launay, J-M; Leboyer, M; Gillberg, C; Bourgeron, T.** Abnormal melatonin synthesis in autism spectrum disorders. *Molecular Psychiatry*, (2008) 13, 90–98.
- [11] **Joubert, V; Bourthoumieu, S; Leveque, P; Yardin, C.** Apoptosis is Induced by Radiofrequency Fields through the Caspase-Independent Mitochondrial Pathway in Cortical Neurons. *Radiation Research*, 2008 pp. 38– 45.
- [12] **Fatemi, SH; Araghi-Niknam, M.** Levels of Bcl-2 and P53 are altered in superior frontal and cerebellar cortices of autistic subjects. *Cellular and Molecular Neurobiology*, 2003 Dec;23(6) pp. 945-52.
- [13] **Mittur, A V; Kaplowitz, N; Kempner, E S; Ookhtens, M.** Radiation inactivation studies of hepatic sinusoidal reduced glutathione transport system. *Biochimica et biophysica acta*, (2000) 5;1464 (2):207-18.
- [14] **Kern, JK; Jones, AM.** Evidence of toxicity, oxidative stress, and neuronal insult in autism. *Journal of Toxicology and Environmental Health*, 2006 (6):485-99.
- [15] **Adey, W. Ross.** Electromagnetics in Biology and Medicine. *Modern Radio Science* edited by Hiroshi Matsumoto, Published for the International Union of Radio Science by Oxford University Press, 1993 pp. 231-249.
- [16] **McGinnis, Woody R., MD.** Oxidative Stress in Autism: What Parents Should Know. *The ASA's 36th National Conference on Autism Spectrum Disorders*, (July 13-16, 2005)
- [17] **Schmitz, C; Keller, E; Freuding, T; Silny, J; Korr, H.** 50-Hz magnetic field exposure influences DNA repair and mitochondrial DNA synthesis of distinct cell types in brain and kidney of adult mice. *Acta Neuropathologica* (Berl), 2004; 107:(3), pp. 257 – 264.
- [18] **Rossignol, DA; Frye, R E.** Mitochondrial dysfunction in autism spectrum disorders: a systematic review and meta-analysis. *Molecular Psychiatry* Published on-line January 25th, 2011.
- [19] **Huber, R; Treyer, V.; Schuderer, J.; Berthold, T; Buck, A., Kuster, N. Landolt, H. P. and Achermann, P.** Exposure to pulse-modulated radio frequency electromagnetic fields affects regional cerebral blood flow. *European Journal of Neuroscience*, 2005 21 (4), pp. 1000 – 1006.
- [20] **Gillberg, Carina; Bjure, J; Uvebrant, P; Vestergren, E; Gillberg, C.** SPECT (Single Photon Emission Computed Tomography) in 31 children and adolescents with autism and autistic-like conditions. *European Child & Adolescent Psychiatry*, 1993 2:(1) pp.50-59.

- [21] **Baieth, H. E. Abdel.** Physical Parameters of Blood as a Non - Newtonian Fluid. *International Journal of Biomedical Science*, Dec 15, 2008 4(4) pp. 323-329.
- [22] **Bradstreet, J; Kartzinel, J.** Biological interventions in the treatment of autism and PDD. In: Rimland B, ed. *DAN! (Defeat Autism Now!) Fall 2001 Conference*. San Diego, CA: Autism Research Institute; 2001.
- [23] **Opler, Mark; Rukenstein, Adriana; Coté, Lucien ; Goodman Reba.** Reduced Dopamine Levels in PC12 Cells Exposed to Low Frequency Electromagnetic Fields. *Bioelectrochemistry and Bioenergetics*, May 1997;42(2) pp. 235-239
- [24] **Ernst, M; Zametkin, AJ; Matochik, JA; Pascualvaca, D; Cohen, RM.** Low medial prefrontal dopaminergic activity in autistic children. *The Lancet*, August 1997 350: 9078, p. 638.
- [25] **Tamasidze, AG; Nikolaishvili, MI.** Effect of high-frequency EMF on public health and its neuro-chemical investigations. *Georgian Med News*, 2007 Jan;(142):58-60. [Article in Russian]
- [26] **Chance, WT; Grossman, CJ; Newrock, R; Bovin, G; Yerian, S; Schmitt, G; Mendenhall, C.** Effects of electromagnetic fields and gender on neurotransmitters and amino acids in rats. *Physiology & Behavior*, 1995 Oct 58(4):743-8.
- [27] **Anderson, George M.; Freedman , Daniel X.; Cohen, Donald J. ; Volkmar, Fred R.; Hoder, E. Lawrence; McPhedran, Peter; Minderaa, Ruud B. ; Hansen, Carl R.; Young, J. Gerald.** Whole Blood Serotonin in Autistic and Normal Subjects. *Journal of Child Psychology and Psychiatry*, 2006 28:(6) pp. 885 – 900.
- [28] **Nikitina, V.N.** Proceedings from the international workshop: Clinical and physiological investigations of people highly exposed to electromagnetic fields. St. Petersburg, Russia, October 16-17, 2000.
- [29] **Horvath, K; Perman, JA.** Autistic disorder and gastrointestinal disease. *Current Opinion in Pediatrics*, 2002 14:(5) pp.583-7.

Individual Rights; Deborah M. Rubin Comments, Feb 2, 2013

FCC 12-152

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of	)	
	)	
Notice of Proposed Rulemaking	)	
18 FCC Rcd 13187, 13188 ¶1 (2003)	)	ET Docket No. 03-137
	)	
And	)	
	)	
Service Rules for the Advanced Wireless Services	)	WT Docket No. 12-357
H Block---Implementing Section 6401 of the	)	
Middle Class Tax Relief and Job Creation Act of	)	
2012 Related to the 1915-1920 MHz and	)	
1995-2000 MHz Bands ¶53 footnote 95	)	

To: Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Comment Filed by: Deborah M. Rubin
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February 2, 2013

AFFIDAVIT OF Deborah M. Rubin

State of Florida]

Hillsborough County]

I, Deborah M. Rubin, attest that my statements are true to the best of my knowledge.

Comment round for ET Docket No. 03-137 and WT Docket No. 12-357.

1. My name is Deborah M. Rubin. My address is 19160 Dove Creek Drive, Tampa, FL 33647.
2. My family and I are exposed to unnatural, manmade, microwave radiation against our wills in school, at work, in our home, and every place in between every single day. The FCC must review its policy and guidelines to protect our health.
3. **First and foremost, the FCC Guidelines must be revised because they are not only insufficient to protect the public from the adverse biological effects of low level microwave and radiowave exposure, but they are also realistically unenforceable and ineffective**—even with an alleged safety factor of 10.

3a. Real world personal exposures are unpredictable and may frequently exceed FCC guidelines undetected, as is demonstrated in Hondou, et al 2002:

<http://arxiv.org/ftp/physics/papers/0703/0703124.pdf>

"For a standard train carriage, with a carrying capacity of 151 people, Hondou's calculations show that it is possible to exceed ICNIRP exposure limits if 30 people, each with a mobile phone that emits radio waves at a power of 0.4 watts, all use their phones at the same time. The peak power a mobile phone is allowed to produce is two watts."

3b. Laboratory studies do not and can not simulate every possible real life exposure.

3c. The guidelines can not possibly account for every individual in every possible position he or she may occupy in relation to all microwave-emitting devices in his or her personal space.

3d. In our daily lives, we are exposed to the multiple personal wireless devices of numerous individuals simultaneously—in school, at work, on the train, on the bus, in the movie theater, etc.

3e. Along with those exposures, we are exposed to multiple infrastructural sources-- including, but not limited to the involuntary exposures from towers, smart meters, wifi routers, etc.

3f. Many towers already have collocated sets of antennae, further increasing the exposure level and complexity of the waveforms.

3g. As if that weren't hazardous enough, FCC is currently considering adding high-powered, Super WiFi to that infrastructural list-- even as they are allegedly now considering the revision of their guidelines for safety. Super WiFi is capable of easily penetrating concrete walls, etc.

What additional health impact will Super WiFi have on all living things, especially the young, the ill, the elderly and the electromagnetically hypersensitive people? EHS, electromagnetic hypersensitivity, is recognized by many pre-eminent researchers and the Cleveland Clinic. Whom shall we hold accountable for the loss of our good health?

3h. Various surfaces reflect radio and microwaves, which can amplify the exposure in unique and unpredictable ways. Again FCC allows this hazardous

physical agent to invade the walls of my home without my consent and against my will. They are serving the Industry before my Health. Current FCC guidelines do not protect the Public in the Real World.

4. The Public has not been fully informed that there are thousands of peer-reviewed studies showing adverse effects from microwave and radiowave exposure.

4a. The FCC has not responsibly informed the unsuspecting Public--whom FCC is obligated to serve--that as of May 31, 2011, radiowave electromagnetic fields are a Class 2B carcinogen per the International Agency for Research on Cancer (IARC) of the World Health Organization.

4b. FCC and Industry do not inform the public and furthermore deliberately misleads them.

For example, PG&E's website states:

<http://www.pge.com/myhome/edusafety/systemworks/rf/>

"The World Health Organization (WHO) advises: "A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. *To date, no adverse health effects have been established for mobile phone use.*" Really? That statement is in direct contradiction to the IARC position stated in 4a. And to numerous peer-reviewed studies.

According to FCC's site: <http://www.fcc.gov/guides/wireless-devices-and-health-concerns>

"According to the FDA and the World Health Organization (WHO), among other organizations, to date, the weight of scientific evidence has not effectively linked exposure to radio frequency energy from mobile devices with any known health problems."

Again a contradiction. [An internal 1993 FDA memo states there is strong data](#)

indicating harm:

<http://microwavenews.com/news/backissues/j-f03issue.pdf>

“In the spring of 1993 at the height of public concern over cell phone–brain tumour risks, Food and Drug Administration (FDA) biologists concluded that the available data ****strongly suggest**** that microwaves can ****accelerate the development of cancer**** This assessment is in an internal agency memo recently obtained by Microwave News under the Freedom of Information Act.”

EPA, besides the Hankins letter found here:

<http://www.emrpolicy.org/faq/five.htm>

Also see:

http://microondes.files.wordpress.com/2010/03/robert_c_kane_cellular_telephone_russian_roulette.pdf

“U.S. EPA released a draft copy of its report on the evaluation of the potential carcinogenicity of electromagnetic fields. The report, first of all, finds that in view of these laboratory studies, there is reason to believe that the findings of carcinogenicity in humans are biologically plausible. Of course, they were referring to laboratory studies that they had reviewed. This admission by the EPA means that the carcinogenic effects of electromagnetic energy are valid or likely....The EPA has concluded that the results of the occupational cancer studies are remarkably consistent [T]he consistency and specificity of the findings provide evidence that EM- field exposure in the workplace may pose a carcinogenic risk for adults . . .****** (see footnote 94). Radiofrequency energy exposure has moved into the everyday environment for most people. What was true for the relatively few individuals in the past is now, by the EPA’s own conclusions, the norm for the entire population.

“In summary form, the EPA’s report of five case control studies found that four of the five noted significantly elevated risks of cancer in the following categories of employment; (1) gliomas and astrocytomas in Maryland electricians, telephone servicemen, linemen, railroad and telecommunication workers, engineers as well as

electronic engineers;

(2) primary brain cancer in workers of Philadelphia, northern New Jersey, and south Louisiana involved with design, manufacture, repair, or installation of electrical and electronic equipment;

(3) brain cancer in East Texas male workers involved in highly exposed (EM fields) occupations in the transportation, communication, and the utilities industry;

(4) brain cancer in workers identified in a 16-state NCHS survey of industries and occupations" (see footnote 94). One common thread that runs through these four case studies is brain cancer.

"Realize now that the levels of electromagnetic energy to which those workers were typically exposed were much lower than the exposure to which a portable cellular telephone user is subjected with each telephone call. The EPA, in this report, concedes that "There is a link between exposure to EM fields and certain forms of site-specific cancer, namely leukemia, CNS, and lymphoma" (see footnote 94). Of course, in the instances when the exposure is directed at the head and brain of the human subject, as it is with portable cellular telephone use, we should expect that the predominant form of cancer would be central nervous system (brain) cancer."

FCC safety statements are misleading. Clearly. FCC Guidelines are not protective of Human or Environmental Health. We should not have to sacrifice either for Industry.

4c. The Public voluntarily uses numerous devices every day, for hours a day, and is involuntarily exposed, all day long in many cases, with no understanding of the health hazard. The Public relies on FCC to protect them. FCC is not a health agency and therefore is not qualified to set public health policy. The Telecom Act of 1996 prohibits the properly qualified Health agencies and Health experts from setting proper, science- based exposure limits that are truly protective of people and their environment. FCC should be transparent in all aspects of Guideline setting and

include independent scientists from all sides of the Health debate.

5. Exposure is shown to cause adverse biological effects in thousands of peer-reviewed, scientific studies. FCC's own website says:

http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

"Several years ago publications began appearing in the scientific literature, largely overseas, reporting the observation of a wide range of low-level biological effects.....More recently, other scientific laboratories in North America, Europe and elsewhere have reported certain biological effects after exposure of animals ("in vivo") and animal tissue ("in vitro") to relatively low levels of RF radiation. **These reported effects have included certain changes in the immune system, neurological effects, behavioral effects, evidence for a link between microwave exposure and the action of certain drugs and compounds, a "calcium efflux" effect in brain tissue (exposed under very specific conditions), and effects on DNA....**In general, while the possibility of "non-thermal" biological effects may exist, whether or not such effects might indicate a human health hazard is not presently known. **[as if it could possibly be benign]** Further research is needed to determine the generality of such effects and their possible relevance, if any, to human health."

5a. As to the first part of that statement, reports of low-level adverse effects began appearing 40 years ago or more. For example:

Raines, 1981. ELECTROMAGNETIC FIELD INTERACTIONS WITH THE HUMAN BODY: OBSERVED EFFECTS AND THEORIES. NASA Purchase Order No. S-75151B . Report Prepared for: National Aeronautics and Space Administration Goddard Space Flight Center Greenbelt, Maryland 20771. April 9, 1981.

Adams and Williams. 1975. Biological Effects of electromagnetic radiation (radiowaves and microwaves)--Eurasian community countries. Prepared by U.S. Army Medical Intelligence and Information Agency Office of the Surgeon General.

Cleary, 1970. Biological Effects and Health Implications of Microwave Radiation, Symposium Proceedings. Richmond Virginia, September 17-19, 1969. Sponsored by Medical College of Virginia, Virginia Commonwealth University with the support of Bureau of Radiological Health, U.S. Department of Health, Education, and Welfare, Public Health Service, Environmental Health Service.

Bergman 1965. The Effect of Micro Waves on the Central Nervous System. Pub. Research and Scientific Laboratory of Ford Motor Company, 1965.

5b. Secondly, with that knowledge, FCC has somehow determined it is wise to blanket the entire country, including our schools, hospitals, communities, and even our homes by way of smart meters and cell towers with involuntary exposure to microwave radiation.

Is this a reasonable, science-based public health policy?

6. Our children are in danger. The Public has not been properly informed of the documented health hazards associated with exposures to wireless devices. FCC, other regulators and Industry are willfully blind to the documented health hazards. FCC is intentionally misleading the public into believing there are no risks associated with the use of wireless devices. FCC is allowing Industry to market microwave-emitting toys to the parents of infants and toddlers for use by infants and toddlers.

Once again, is it a reasonable public policy to expose our entire society and environment, including our youngest children to a form of radiation that the FCC admits “might indicate a human health hazard”? At best you have uninformed consent from voluntary users; at worst, from those of us who protest, you have exposed us to a health hazard against our wills.

6a. Children are demonstrated in the scientific, peer-reviewed literature to be more sensitive to the effects of microwave/radiowave radiation than adults because they are still maturing. Fetuses in the womb have been demonstrated to be affected.



Penetration of radiation on brain of an adult, a 10 year old and a 5 year old

Children are smaller, their bones are thinner, their nervous and immune systems are not fully developed, and they will have a longer exposure over their lifetimes. Microwave radiation penetrates more deeply into a child's body. Schools are increasingly going wireless with goals to be completely wireless by 2015.

<http://www.tampabay.com/news/education/k12/florida-looks-at-taking-school-textbooks-completely-digital-by-2015/1152138>

Our schools teach the scientific method and yet they and our government do not apply it to public health policy. How can such an initiative go forward with the IARC classification and thousands of studies showing adverse biological effects from exposure levels orders of magnitude lower than the current guidelines? Our children's health and lives are at stake.

Children are irradiated in school for 6 to 8 hours a day from age 5 and up when they are at their most vulnerable.

Sample of studies showing Children are more vulnerable than adults:

<http://informahealthcare.com/doi/abs/10.3109/15368378.2011.622827>

(with link to full study text)

Exposure Limits: The underestimation of absorbed cell phone radiation, especially in children

The existing cell phone certification process uses a plastic model of the head called the Specific Anthropomorphic Mannequin (SAM), representing the top 10% of U.S. military recruits in 1989 and greatly underestimating the Specific Absorption Rate (SAR) for typical mobile phone users, especially children. A superior computer simulation certification process has been approved by the Federal Communications Commission (FCC) but is not employed to certify cell phones. In the United States, the FCC determines maximum allowed exposures. Many countries, especially European Union members, use the “guidelines” of International Commission on Non-Ionizing Radiation Protection (ICNIRP), a non governmental agency. Radiofrequency (RF) exposure to a head smaller than SAM will absorb a relatively higher SAR. Also, SAM uses a fluid having the average electrical properties of the head that cannot indicate differential absorption of specific brain tissue, nor absorption in children or smaller adults. The SAR for a 10-year old is up to 153% higher than the SAR for the SAM model. When electrical properties are considered, a child's head's absorption can be over two times greater, and absorption of the skull's bone marrow can be ten times greater than adults. Therefore, a new certification process is needed that incorporates different modes of use, head sizes, and tissue properties. Anatomically based models should be employed in revising safety standards for these ubiquitous modern devices and standards should be set by accountable, independent groups.

<http://www.ncbi.nlm.nih.gov/pubmed/20463374?dopt=Abstract>

<http://www.ncbi.nlm.nih.gov/pubmed/20107250>

http://www.radiationresearch.org/images/RRT_articles/Buchner%20Eger%20Rimbach%20Study%202011%20ENG%20FINAL%20Revised%2029%20July%202011.pdf

<http://www.scribd.com/doc/75218005/Hormone-Effects-Eskander-Et-Al-2011>

<http://www.benthamscience.com/open/topedj/articles/V006/46TOPEDJ.pdf>

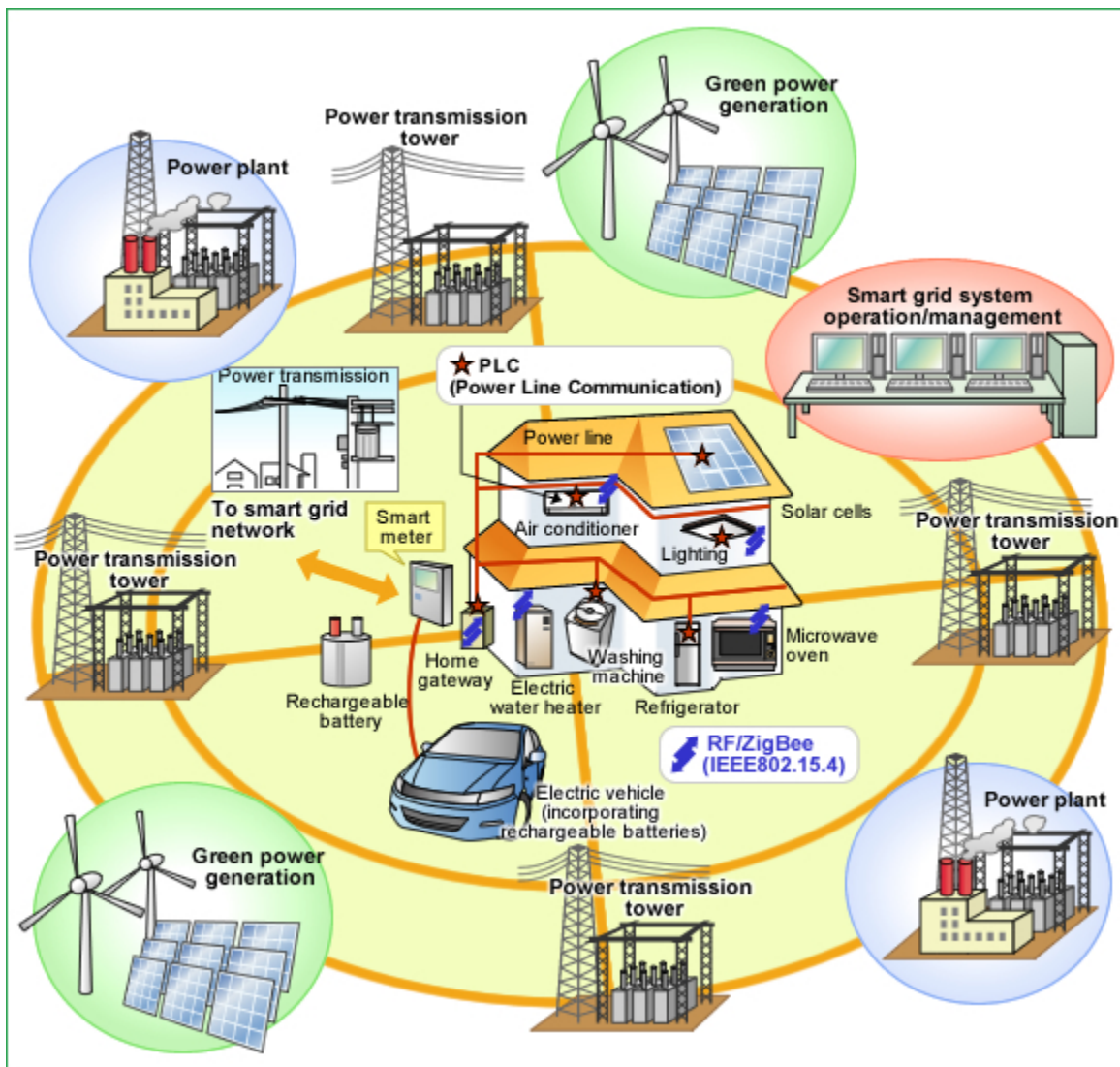
http://www.avaate.org/IMG/pdf/NINOS_Cell_phone_use_and_behavioural_problems_in_Iech.2010.115402.full.pdf

http://www.bioinitiative.org/report/wp-content/uploads/pdfs/sec12_2012_Evidence_%20Childhood_Cancers.pdf

7. Current FCC guidelines do not protect the Public from the synergistic effects of microwave/radiowave exposure and other hazards such as chemical toxins. Furthermore, the complex interactions of RF, ELF, Xray, gamma, and UV radiations have not been considered in the guidelines.

8. Another large scale microwave deploying initiative is currently underway, despite the aforementioned, long-standing body of peer-reviewed, scientific literature showing adverse outcomes from low-level microwave/radiowave exposure. The SmartGrid is forcing microwave-emitting utility meters onto nearly every single home in America. Additionally, the wireless Grid is increasing the number of towers that involuntarily irradiate every living thing every single day. And the home area network, the final component of the SmartGrid, will exponentially increase the radiation in our homes from the chips in the appliances, thermostats and their communication with the meters.

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What you don't see in this diagram are all the living people, plants, animals and other life forms that are being irradiated. Einstein said, **"Concern for man and his fate must always form the chief interest of all technical endeavors. Never forget this in the midst of your diagrams and equations."** Let us not forget or fail to rigorously analyze the data set and to honestly consider the consequences of our actions. We must correct our mistakes based on what we know now.

Submitted by,

Deborah M. Rubin

19160 Dove Creek Drive

Tampa, FL 33647

February 3, 2013

Individual Rights; Kevin Mottus Comments, Aug. 30, 2013

FCC 13-39

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of

Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies ET Docket No. 13-84

Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields ET Docket No. 03-137

To: Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Comment Filed by: (Kevin Mottus)
(11041 Santa Monica Blvd. #627
(Los Angeles, CA 90025)
(stopwirelessradiation@gmail.com)
(310-479-0299)

August 30 , 2013

JA 10145

AFFIDAVIT OF Kevin Mottus

State of CA]

LA_ County]

I, Kevin Mottus, attest that my statements are true to the best of my knowledge.

Comment round for ET Docket No. 03-137 and ET Docket No. 013-84.

1. My name is Kevin Mottus. My address is 11041 Santa Monica Blvd. #627 Los Angeles, CA 90025.

2. I am a SOCIAL WORKER.

The FCC needs to stop denying the existence of non-thermal biological effects from Radio Frequency Radiation emitted and used by all wireless devices. This agent is inherently a harmful agent. FCC guideline need to be completely revised too reflect the inherently harmful nature of RF radiation emitted by all wireless devices. See the attached sworn declarations from experts David Carpenter MD, Lloyd Morgan, Magda Havas PhD, Barry Trower, Curtis Bennet from a recent Federal Court case in Portland, Oregon suing the Portland Unified School District to turn off their WiFi due to the inherently harmful nature of WiFi and to protect the health and well being of the child in question and all children in the district. Please see the sworn declarations attached and make them part of the official record.

According to these sworn declarations, Dr. David Carpenter MD is quoted as stating that "Decades of scientific study have produced substantial evidence that EMF and RF//MW radiation may be considered neurotoxic, carcinogenic, and genotoxic" (item 17 page 5). Further when speaking of WiFi in the classroom specifically he states that "Human studies of comparable RF/MW radiation parameters show changes in brain function including memory loss, retarded learning, performance impairment in children, headaches and neurodegenerative conditions, melatonin suppression and sleep disorders, fatigue, hormonal imbalances, immune dysregulation such as allergic and inflammatory responses, cardiac and blood pressure problems, genotoxic effects like miscarriage, cancers such as childhood leukemia, childhood and adult brain tumors, and more" (item 14 page 4).

Due to the inherently carcinogenic and harmful nature of Radio Frequency radiation, the FCC needs to act immediately to ban completely all forms of WiFi and similar microwave emitting devices such as wireless internet routers, wireless video game consoles, and a myriad of other forms of microwave transmitters from all settings but

especially from schools, all workplaces, and homes. As it is now, people are being involuntarily exposed to this harmful agent in a most complete, comprehensive, and efficient manner against their will and without proper knowledge of the possible harmful effects or consent to this harmful exposure.

The FCC is allowing our population in mass to be exposed to a known World Health Organization Class 2B Carcinogen in the same class as lead. Our government certainly would not allow our homes, workplaces, and retail locations to be painted with lead paint much less be spraying that lead paint continuously all over its human occupants but that is what we are essentially doing by allowing WiFi and other forms of microtransmitters to continue to be used in our homes, schools, workplaces and retail locations.

It is unconscionable how the FCC continues to ignore long standing and established evidence that WiFi and the RF radiation it emits is a biologically harmful agent. Please consider as evidence available to the public on line and enter into the record all depositions given as part of the AHM and David Morrison vs Portland Public Schools Civil Action No. 3:11-cv-00739-MO. Please also consider as evidence and enter into the official record the History of Health Effects from RF and microwave radiation from the Archives of Zory Glaser documenting health effects of RF exposure seen by the Navy available at magdahavas.com on line.

It is even more unconscionable that the FCC is actively promoting the unhealthy exposure of all American to RF radiation by promoting the use and expanded use of WiFi in all settings of our life. We are literally being slowly microwaved 24 hours a day to the detriment of our health. This must stop immediately; the FCC must take corrective action to rid all Americans of this unhealthy exposure. Just because we cannot see, feel or taste this agent does not mean it is not harming us on a cellular level because it is.

The FCC guidelines governing RF exposure must reflect Radio Frequency radiation's inherently harmful nature and be lowered 1 million times to .0001uW/cm² as recommended and defended by the recent update of the BioInitiative Report to avoid known harmful biological effects above this level. Please see the entire BioInitiative Report at bioinitiative.org and enter it into the official record. FCC guidelines must immediately acknowledge and exposure levels of RF radiation permitted be reduced to take into account non-thermal biological effects of RF radiation. They need to be adjusted significantly downward to account for special populations such as children, pregnant women and the elderly. The exposure level of the guidelines must be additionally lowered to account for long term exposures inherent to cell tower admissions and other continuous exposures of our population to RF radiation.

The FCC needs to stop immediately facilitating, encouraging, and supporting the reckless, aggressive and pervasive expansion of WiFi and other wireless exposures due to the involuntary exposure of our population to RF radiation which is inherently biological harmful to humans. By exposing us to WiFi in our homes, workplaces, retail locations and in other forms like smart meters and whole communities with WiMax, you are making people sick with Electrosensitivity which has been recognized as a medical

condition by other countries. You are giving people cancer; see sworn declarations discussing the association between Leukemia and other cancers and EMF or RF radiation levels similar to that used by WiFi.

The FCC needs to immediately inform each and every Americans of the inherently harmful nature of RF radiation as a biotoxic agent so they can take corrective action to protect their health and the health of their families, coworkers and communities. People are getting electrosensitive and I can bring them to the FCC to testify. People are getting cancer due to heavy long term exposure to cell phones and other RF radiating devices. I can bring them and/or their surviving family members to the FCC to testify. Without adequate safety standards in place, we are the experiment-the research as you allow mass microwaving of our population with RF radiation. The FCC is currently allowing wireless companies and manufacturers of wireless devices to experiment with our health and our lives. People are getting sick. You are disabling our work force; you are killing our workforce with cancer.

The FCC needs to immediately post every scientific article ever published regarding the biological effects of all EMF's but especially RadioFrequency Radiation. The FCC needs to immediately make available on their website all of the warnings from every country in the world regarding the dangers of RF radiation to humans. Because almost every American is effected by RF radiation exposure and relatively few visit you site, you need to immediately warn each and every American of the science available showing non-thermal effects from RF radiation used by WiFi and all other wireless devices. Instead of actively expanding RF exposure, the FCC needs to actively reach out to the medical field and inform them of the symptoms of Electrosensitivity and cancers prone to be associated with RF radiation exposure, to aid with diagnosis and treatment of their patients and actively collect and synthesize information regarding observed health effects of RF radiation on our population. As it is now no one is actively communicating with our medical professionals or collecting necessary data to track Electrosensitivity in our population or track the increase in cancer amongst heavy wireless users (3-8 hours a day) and/or those highly RF radiation exposed. To ignore this responsibility or place it on others while actively promoting the spread and mass exposure of this harmful agent is irresponsible and willfully destructive to our population. Finally, the FCC guidelines governing RF radiation emissions need to immediately be lowered 1 million times to provide a protective exposure level that avoids known non-thermal biological effects as articulated, supported and defended in the Bioinitiative Report. For the FCC to continue to deny the evidence indicating the existence of non-thermal biological effects of RF is irresponsible, malicious and criminal due to the harm and death that it can cause.

Submitted by:

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(310-479-0299)

August 30 , 2013

Individual Rights; Alexandra Ansell Comments, Aug. 30, 2013

FCC 13-39

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of	)	
	)	
Reassessment of Federal Communications	)	ET Docket No. 13-84
Commission Radiofrequency Exposure Limits and	)	
Policies	)	
	)	
Proposed Changes in the Commission's Rules	)	ET Docket No. 03-137
Regarding Human Exposure to Radiofrequency	)	
Electromagnetic Fields	)	
	)	

To: Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Comment Filed by: Alexandra Ansell
728 John Adams Lane
West Melbourne, Florida 32904

August 30, 2013

AFFIDAVIT OF Alexandra Ansell

State of Florida

Brevard County

I, Alexandra Ansell, attest that my statements are true to the best of my knowledge.

Comment round for FCC ET Docket No. 013-84 and ET Docket No. 03-137

My name is Alexandra Ansell. My address is 728 John Adams Lane, West Melbourne, Florida 32904

I am a medical transcriptionist

We are in the midst of a growing health crisis resulting from the proliferation of radiofrequencies from wireless technology, including so-called smart meters and cell phones. The FCC has refused set a realistic safety standard that includes nonthermal biologic effects of microwave radiation. The EPA warned the FCC in 2002 that their 1996 standard does not apply to chronic, nonthermal exposures with an exposed population that includes children, the elderly and people with various debilitating physical and medial conditions. Having only a tissue heating standard is the giant loophole the telecommunications industry and the utilities have exploited to disregard the huge and growing body of evidence of negative biologic effects of the chronic, nonthermal exposures we are now subject to. Declared a class 2B carcinogen by the World Health Organization (in the same category with methylmercury, HIV infection and lead) radiofrequencies are the new cigarettes, but one can choose not to smoke. The FCC should act in the public interest and support the establishment of a biologically based safety standard for wireless devices.

4. It is not necessary to have “wireless everything” especially if this comes at a horrific cost in terms of public health. Once again, are we to act for the short term financial gain of telecommunications and utilities and ignore the long range consequences of our behavior? What sense does it make to produce an electric grid that is now less secure? See GAO report of January 2011 regarding increased vulnerabilities of the modernized electricity grid.

According to the American Academy of Environmental Medicine, there is a synergistic effect between chemicals and electromagnetics in the chemically and electrically sensitive population(s). The addition of an involuntary exposure to radiofrequencies may be the difference between functioning and not. There is a growing population of electrohypersensitive people who are being discriminated against in schools, hotels, government buildings, etc. due to wireless communications. Smart meters are omnipresent in most

communities. One cannot escape (even without a smart meter on one's own home) bombardment with radiofrequencies in the microwave spectrum.

Why has there never been an environmental impact study, despite the EPA's warning to the FCC that its thermal-only standard was inadequate and not protective of sensitive and vulnerable populations (see #3 above)? What about non human "populations" and vegetation? There is evidence in major cities that trees are now suffering from radiofrequency "diseases." What is happening to the human population, especially infants and children?

I am weary of this endless process of being ignored by my elected officials and being referred to "FCC standards" which have been demonstrated over and over again to be monumentally insufficient. It rests with you now to act. I am wondering how many living beings will be forever damaged before you respond with integrity to the responsibility of your office?

The BioInitiative report 2012 discusses peer reviewed scientific studies that have found negative biological effects of RF occurring outside the thermal-only model. (Please refer to the actual report for additional information and direct references to studies.) Since I have no longer have any confidence that you will refer directly to it for the purpose of getting the facts, I have included excerpts below.

The BioInitiative 2012 Report has been prepared by 29 authors from ten countries, ten holding medical degrees (MDs), 21 PhDs, and three MsC, MA or MPHs. Among the authors are three former presidents of the Bioelectromagnetics Society, and five full members of BEMS

BIOINITIATIVE 2012 – CONCLUSIONS

Overall, these 1800 or so new studies report abnormal gene transcription (Section 5); genotoxicity and single-and double-strand DNA damage (Section 6); stress proteins because of the fractal RF-antenna like nature of DNA (Section 7); chromatin condensation and loss of DNA repair capacity in human stem cells (Sections 6 and 15); reduction in free-radical scavengers – particularly melatonin (Sections 5, 9, 13, 14, 15, 16 and 17); neurotoxicity in humans and animals (Section 9), carcinogenicity in humans (Sections 11, 12, 13, 14, 15, 16 and 17); serious impacts on human and animal sperm morphology and function (Section 18); effects on offspring behavior (Section 18, 19 and 20); and effects on brain and cranial bone development in the offspring of animals that are exposed to cell phone radiation during pregnancy (Sections 5 and 18). This is only a snapshot of the evidence presented in the BioInitiative 2012 updated report.

BIOEFFECTS ARE CLEARLY ESTABLISHED

Bioeffects are clearly established and occur at very low levels of exposure to electromagnetic fields and radiofrequency radiation. Bioeffects can occur in the first few minutes at levels associated with cell and cordless phone use. Bioeffects can also occur from just minutes of exposure to mobile phone masts (cell towers), WI-FI, and wireless utility ‘smart’ meters that produce whole-body exposure. Chronic base station level exposures can result in illness.

BIOEFFECTS WITH CHRONIC EXPOSURES CAN REASONABLY BE PRESUMED TO RESULT IN ADVERSE HEALTH EFFECTS

Many of these bioeffects can reasonably be presumed to result in adverse health effects if the exposures are prolonged or chronic. This is because they interfere with normal body processes (disrupt homeostasis), prevent the body from healing damaged DNA, produce immune system imbalances, metabolic disruption and lower resilience to disease across multiple pathways. Essential body processes can eventually be disabled by incessant external stresses (from system-wide electrophysiological interference) and lead to pervasive impairment of metabolic and reproductive functions.

LOW EXPOSURE LEVELS ARE ASSOCIATED WITH BIOEFFECTS AND ADVERSE HEALTH EFFECTS AT CELL TOWER RFR EXPOSURE LEVELS

At least five new cell tower studies are reporting bioeffects in the range of 0.003 to 0.05 $\mu\text{W}/\text{cm}^2$ at lower levels than reported in 2007 (0.05 to 0.1 uW/cm^2 was the range below which, in 2007, effects were not observed). Researchers report headaches, concentration difficulties and behavioral problems in children and adolescents; and sleep disturbances, headaches and concentration problems in adults. Public safety standards are 1,000 – 10,000 or more times higher than levels now commonly reported in mobile phone base station studies to cause bioeffects.

EVIDENCE FOR FERTILITY AND REPRODUCTION EFFECTS: HUMAN SPERM AND THEIR DNA ARE DAMAGED

Human sperm are damaged by cell phone radiation at very low intensities in the low microwatt and nanowatt/cm² range (0.00034 – 0.07 uW/cm²). There is a veritable flood of new studies reporting sperm damage in humans and animals, leading to substantial concerns for fertility, reproduction and health of the offspring (unrepaired de novo mutations in sperm). Exposure levels are similar to those resulting from wearing a cell phone on the belt, or in the pants pocket, or using a wireless laptop computer on the lap. Sperm lack the ability to repair DNA damage.

Studies of human sperm show genetic (DNA) damage from cell phones on standby mode and wireless laptop use. Impaired sperm quality, motility and viability occur at exposures of 0.00034 uW/cm² to 0.07 uW/cm² with a resultant reduction in human male fertility. Sperm cannot repair DNA damage.

Several international laboratories have replicated studies showing adverse effects on sperm quality, motility and pathology in men who use and particularly those who wear a cell phone, PDA or pager on their belt or in a pocket (Agarwal et al, 2008; Agarwal et al, 2009; Wdowiak et al, 2007; De Iuliis et al, 2009; Fejes et al, 2005; Aitken et al, 2005; Kumar, 2012). Other studies conclude that usage of cell phones, exposure to cell phone radiation, or storage of a mobile phone close to the testes of human males affect sperm counts, motility, viability and structure (Aitken et al, 2004; Agarwal et al, 2007; Eroglu et al., 2006). Animal studies have demonstrated oxidative and DNA damage, pathological changes in the testes of animals, decreased sperm mobility and viability, and other measures of deleterious damage to the male germ line (Dasdag et al, 1999; Yan et al, 2007; Otitoloju et al, 2010; Salama et al, 2008; Behari et al, 2006; Kumar et al, 2012). There are fewer animal studies that have studied effects of cell phone radiation on female fertility parameters. Panagopoulous et al. 2012 report decreased ovarian development and size of ovaries, and premature cell death of ovarian follicles and nurse cells in *Drosophila melanogaster*. Gul et al (2009) report rats exposed to stand-by level RFR (phones on but not transmitting calls) caused decrease in the

number of ovarian follicles in pups born to these exposed dams. Magras and Xenos (1997) reported irreversible infertility in mice after five (5) generations of exposure to RFR at cell phone tower exposure levels of less than one microwatt per centimeter squared ($\mu\text{W}/\text{cm}^2$).

EVIDENCE THAT CHILDREN ARE MORE VULNERABLE

There is good evidence to suggest that many toxic exposures to the fetus and very young child have especially detrimental consequences depending on when they occur during critical phases of growth and development (time windows of critical development), where such exposures may lay the seeds of health harm that develops even decades later. Existing FCC and ICNIRP public safety limits seem to be not sufficiently protective of public health, in particular for the young (embryo, fetus, neonate, very young child).

The Presidential Cancer Panel (2010) found that children *‘are at special risk due to their smaller body mass and rapid physical development, both of which magnify their vulnerability to known carcinogens, including radiation.’*

The American Academy of Pediatrics, in a letter to Congressman Dennis Kucinich dated 12 December 2012 states “Children are disproportionately affected by environmental exposures, including cell phone radiation. The differences in bone density and the amount of fluid in a child’s brain compared to an adult’s brain could allow children to absorb greater quantities of RF energy deeper into their brains than adults. It is essential that any new standards for cell phones or other wireless devices be based on protecting the youngest and most vulnerable populations to ensure they are safeguarded through their lifetimes.”

How can the FCC fail to act in light of the facts?

Respectfully submitted by

Alexandra Ansell

728 John Adams Lane

West Melbourne, Florida 32904

August 30, 2013

Individual Rights; Steen Hviid Comments, Aug. 25, 2013

Federal Communications Commission
ET Docket No. 13-84
August 2013

**Comments on Notice of Inquiry regarding Reassessment of
Exposure to Radiofrequency Electromagnetic Fields
Limits and Policies**

Dear FCC,

The current limits on RF exposures are not protective of the public health, especially not for children and other vulnerable populations.

The existing limits were enacted in 1996. Much has changed since, which renders them obsolete. Children use wireless devices for many hours each day, some even sleep with their Smartphone under their pillow. Various types of wireless transmitters are ubiquitous, so the entire population is irradiated 24/7.

The Telecommunications Act of 1996 (section 704) expressly forbids communities from siting transmission towers based on health precautions. Telephone companies have started to remove their landlines in some areas, forcing people to use cell phones and wireless internet service. Many schools require wireless tablets in their classrooms. People no longer have a choice whether they wish to be irradiated or not.

The FCC will need to enact new limits for today's environment, limits that protect the most vulnerable populations and take into account that the irradiation is involuntary. Given the involuntary exposures, the limits must work for everybody and must be conservative enough to account for any doubt. The existing standards fail on all accounts.

Much research published in the past twenty years clearly suggests the current limits are based on an obsolete model, and are much too high.

The potential cost to society in terms of lost productivity, lost educational opportunity and direct health expenses is enormous.

Further delaying lowering the limits will also increase the cost of the technical measures needed, costs that may become so large that they must be borne by the public.

The FCC should not repeat the mistakes of the past, where special interests kept delaying regulatory action by lobbying efforts and fabricating doubt. Well known examples include tobacco, leaded gasoline and asbestos.

The health effects of asbestos were well known in the 1930s, but the industry was able to delay action until the 1970s. The cost of renovating all the buildings containing asbestos built during those decades was enormous — a cost borne by others than the asbestos industry, which saw no downside to their delaying tactics.

History will continue to repeat itself, unless the FCC frees itself from special interest influence, looks very skeptically at “research” funded by special interests, and lets any doubt benefit the public health.

Steen Hviid, M.S., engineer
5708 Martin Road
Snowflake, AZ 85937

Documentation of industry influence upon health effect research

Source of Funding and Results of Studies of Health Effects of Mobile Phone Use: Systematic Review of Experimental Studies, Anke Huss et al., Environmental Health Perspectives, January 2007.

Scope and Impact of Financial Conflicts of Interest in Biomedical Research, Justin Bekelman et al., Journal of the American Medical Association, January 22/29, 2008.

Mobile telephones and cancer: Is there really no evidence of an association?, Kjell Hansson Mild et al., International Journal of Molecular Medicine, 12, 2003.

Secret Ties to Industry and Conflicting Interests in Cancer Research, Lennart Hardell et al., American Journal of Industrial Medicine, 2006.

The Real Junk Science of EMFs: Stop Electric Field Cancer Research, Say Industry Scientists, Microwave News, November 2009.

IARC Drops Anders Ahlbom from RF-Cancer Panel, Microwave News, May 2011.

Disconnect, (book), Devra Davis, Penguin/Dutton, 2012.

Doubt is Their Product, (book), David Michaels, Oxford University Press, 2008.

Asbestos: Medical and Legal Aspects, (book), Barry L. Castleman, Aspen Law and Business, 1996.

Individual Rights; Molly Hauck Comments, Aug. 22, 2013

Aug. 22, 2013

Comments to the Federal Communications Commission (FCC) regarding exposure guidelines to Wireless Radiation Notice of Inquiry, ET Docket No. 13-84

- **Use “the precautionary principle”, widely used in Europe, rather than allowing unbridled growth of wi-fi.**

Don't allow any more wi-fi until you have done or read research about the negative health effects of Wi-fi. Don't make people and animals guinea pigs. Research, mostly done outside the U.S., shows many negative health effects. This should be used to regulate and limit the use of wi-fi in the U.S. Instead, industry is forging ahead to make a profit and the FCC and other government agencies are allowing it to happen. Even organizations like the American Cancer Society seem to be led by donations from industry, rather than by protecting citizens.

- * I want biologically based RF/MW exposure guidelines that protect from non-thermal health effects.**

*Current guidelines only allege to protect for thermal heating. FCC's power density value should be lowered from 1,000 uW/cm² to 0.0003 uW/cm². Ref. **THE BIOINITIATIVE REPORT 2012 A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Fields (ELF and RF)** - <http://www.bioinitiative.org/>*

- * Stop using SAR. Start using only electric field based power density values for the RF/MW exposure standard.**

Currently two values are used.** One for near field (holding a phone to your head or lap top on your lap) and one for far field (all other exposure). Near field value is Specific Absorption Rate (SAR) which uses a probe in dead animal tissue to measure for a heating effect. Far field value is a power density unit which is calculated from the actual electric field values. **The FCC wants to move to SAR only.** This is absolutely wrong as SAR has no relation to non thermal effects, cannot be verified by measurements in the field and does not take into account additional transmitters that may be present in real life conditions. Ref. - **Evaluation of Specific Absorption Rate as a Dosimetric Quantity for Electromagnetic Fields Bioeffects

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0062663>

- * Safety standards for sensitive populations need to be set at lower levels than for healthy adult populations.**

*Sensitive populations include the developing fetus, the infant, children, the elderly, those with pre-existing chronic diseases, and those with developed electrical sensitivity (EHS). A child's brain has double the permittivity of an adult's brain. [Ref. **THE BIOINITIATIVE REPORT 2012 A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Fields (ELF and RF)** -*

*<http://www.bioinitiative.org/> and <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0062663> **Evaluation of Specific Absorption Rate as a Dosimetric Quantity for Electromagnetic Fields Bioeffects**]*

*** How I have been harmed from RF/MW exposure.**

I have not been hurt because I wear an electro-magnetic field protector 24/7. There are hundreds of cell towers and antennae within a small radius from my house in Montgomery County, MD. I find them on Antenna Search.

*** This proceeding requires a NEPA evaluation.**

[Ref. - <http://www.ca6.uscourts.gov/opinions.pdf/10a0374p-06.pdf> Per No. 09-5761 **Heartwood, Inc., et al. v. Agpaoa**, et al. there is standing to challenge the current exposure guidelines because you have suffered an 'injury in fact' that is concrete and particularized; is actual or imminent; is traceable to wireless exposure; and that it is likely that this injury will be redressed by lower exposure guidelines.]

*** Re-fund the EPA's non-ionizing radiation protection research program for developing safe RF/MW exposure guidelines. The FCC cannot both promote wireless technologies and regulate RF/MW radiation. Since the FCC is not a health agency, it does not have the expertise to evaluate the science on RF/MW exposure.**

*** Stop facilitating, encouraging, and supporting the rapid expansion of WiFi and other wireless exposures. This results in involuntary exposure to RF/MW. Research shows that it is biologically harmful to humans and other living beings.**

Molly Hauck

4004 Dresden St.

Kensington, MD. 20895-3812

Individual Rights; Prof. Olle Johansson, PhD., Comments, Feb. 6, 2013

**Karolinska Institutet**Department of Neuroscience
Experimental Dermatology Unit

Stockholm, February 6, 2013

To whom it may concern

The possibility of any health consequences of chronic exposure to pulsed microwave exposure from wireless systems, including cellular phones, WiFi, Wimax, smart meters, TETRA, etc., is often denied. However, in the current field of science, the present state-of-the-art regarding this issue is not so simple.

Wireless communication is now being implemented in our daily life in a very fast way. At the same time, it is becoming more and more obvious that the exposure to electromagnetic fields not only may induce acute thermal effects to living organisms, but also non-thermal effects, the latter often after longer exposures. This has been demonstrated in a very large number of studies and includes cellular DNA-damage, disruptions and alterations of cellular functions like increases in intracellular stimulatory pathways and calcium handling, disruption of tissue structures like the blood-brain barrier, impact on vessel and immune functions, and loss of fertility. Whereas scientists can observe and reproduce these effects in controlled laboratory experiments, epidemiological and ecological data derived from long-term exposures reflect in well-designed case-control studies the link all the way from molecular and cellular effects to the living organism up to the induction and proliferation of diseases observed in humans. It should be noted that we are not the only species at jeopardy, practically all animals and plants may be at stake. Although epidemiological and ecological investigations as such never demonstrate causative effects, due to the vast number of confounders, they confirm the relevance of the controlled observations in the laboratories.

Because the effects are reproducibly observed and links to pathology cannot be excluded, the precautionary principle should be in force in the implementation of this new technology within the society. This will be the only method to support the sustainability of these innovative wireless communication technologies. The February 2, 2000 European Commission Communication on the Precautionary Principle notes: "The precautionary principle applies where scientific evidence is insufficient, inconclusive or uncertain and preliminary scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the high level of protection chosen by the EU". *Therefore, policy makers immediately should strictly control exposure by defining biologically-based maximal exposure guidelines also taking into account long-term, non-thermal effects, and including especially vulnerable groups, such as the elderly, the ill, the genetically and/or immunologically challenged, children and fetuses, and persons with the functional impairment electrohypersensitivity.*

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**Karolinska Institutet**Department of Neuroscience
Experimental Dermatology Unit

In November, 2009, a Scientific Panel comprised of international experts on the biological effects of electromagnetic fields met in Seletun, Norway, for three days of intensive discussion on existing scientific evidence and public health implications of the unprecedented global exposures to artificial electromagnetic fields (EMF) from telecommunications and electric power technologies. This meeting was a direct consequence of on-going discussions already from the mid-nineties, when cellular communications infrastructure began to rapidly proliferate, and stretching through, among many, the Benevento (2006), Venice (2008) and London (2009) Resolutions from this decade, and involving important conclusions drawn from the 600-page Bioinitiative Report published August 31, 2007, which was a review of over 2,000 studies showing biological effects from electromagnetic radiation at non-thermal levels of exposure, which partly was published subsequently in the journal Pathophysiology (Volume 16, 2009). The Bioinitiative Report has, in addition, recently been updated (2012).

I have worked for many years trying to clarify the potential dangers of this 24/7, whole-body, artificial EMF irradiation. Along this struggle I have been proud to coauthor some of the most important compilations of the up-to-date knowledge, including (among many) most of the ones above.

The Seletun Scientific Statement (2011) recommends that lower limits be established for electromagnetic fields and wireless exposures, based on scientific studies reporting health impacts at much lower exposure levels. Many researchers now believe the existing safety limits are inadequate to protect public health because they do not consider prolonged exposure to lower emission levels that are now widespread.

The body of evidence on electromagnetic fields requires a new approach to protection of public health; the growth and development of the fetus, and of children; and argues for strong preventative actions. These conclusions are built upon prior scientific and public health reports documenting the following:

- 1) Low-intensity (non-thermal) bioeffects and adverse health effects are demonstrated at levels significantly below existing exposure standards.
- 2) ICNIRP/WHO and IEEE/FCC public safety limits are inadequate and obsolete with respect to prolonged, low-intensity exposures.
- 3) New, biologically-based public exposure standards are urgently needed to protect public health world-wide.
- 4) It is not in the public interest to wait.

• EMR exposures should be reduced now rather than waiting for proof of harm before acting. This is in keeping with traditional public health principles, and is justified now given abundant evidence that biological effects and adverse health effects are occurring at exposure levels hundreds to thousands of times below existing public safety standards around the world.

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- There is a need for mandatory pre-market assessments of emissions and risks before deployment of new wireless technologies. There should be convincing evidence that products do not cause health harm before marketing. Such decisions may have to be quickly revised given new evidence.

- The use of telephone lines (land-lines) or fiber optic cables for SmartGrid type energy conservation infrastructure is recommended. Utilities should choose options that do not create new, community-wide exposures from wireless components of SmartGrid-type projects. Future health risks from prolonged or repetitive wireless exposures of SmartGrid-type systems may be avoided by using fiber-optic cable. Energy conservation is endorsed but not at the risk of exposing millions of families in their homes to a new, involuntary source of wireless radiofrequency radiation, the effect of which on their health not yet known.

Furthermore, based on the available scientific data, the Seletun Scientific Panel states that:

- Sensitive populations (for example, the elderly, the ill, the genetically and/or immunologically challenged) and children and fetuses may be additionally vulnerable to health risks; their exposures are largely involuntary and they are less protected by existing public safety standards.

- It is well established that children are more vulnerable to health risks from environmental toxins in general.

- The Panel strongly recommends against the exposure from wireless systems of children of any age.

- The Panel strongly recommends against the exposure from wireless systems of pregnant women.

This is all in accordance with the intentions of the Precautionary Principle as summarized by Mats Dämvik and myself in our paper from 2010.

I encourage governments to adopt a framework of guidelines for public and occupational EMF exposure that reflect the Precautionary Principle. The Precautionary Principle states when there are indications of possible adverse effects, though they remain uncertain, the risks from doing nothing may be far greater than the risks of taking action to control these exposures. The Precautionary Principle shifts the burden of proof from those suspecting a risk to those who discount it — as some nations have already done. Precautionary strategies should be based on design and performance standards and may not necessarily define numerical thresholds because such thresholds may erroneously be interpreted as levels below which no adverse effect can occur.

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You often hear about "safe levels" of exposure and that there is "no proof of health effects", but my personal response to these seemingly reassuring statements is that it is very important to realize, from a consumer's point of view, that "no accepted proof for health effects" is not the same as "no risk". Too many times, 'experts' have claimed to be experts in fields where actually the only expert comment should have been: "I/we just do not know". Such fields were e.g. the DDT, X-ray, radioactivity, smoking, asbestos, BSE, heavy metal exposure, depleted uranium, etc., etc., etc., where the "no risk"-flag was raised before true knowledge came around. Later on, the same flag had to be quickly lowered, many times after enormous economic costs and suffering of many human beings. Along those lines, it is now (regarding "the protection from exposure to electromagnetic fields" issue) very important to clearly identify the background and employment (especially if they sit, at the same time, on the industry's chairs) of every 'expert' in different scientific committees, and likewise. It is, of course, very important (maybe even more important?) to also let 'whistleblowers' speak at conferences, to support them with equal amounts (or even more?) of economical funding as those scientists and other 'experts' who, already from the very beginning, have declared a certain source or type of irradiation, or a specified product, to be 100% safe – sometimes even before having properly examined them!

In the case of "protection from exposure to electromagnetic fields", it is thus of paramount importance to act from a prudence avoidance/precautionary principle point of view. Anything else would be highly hazardous! Total transparency of information is the key sentence here, I believe consumers are very tired of always having the complete truth years after a certain catastrophe already has taken place. For instance, it shall be noted, that today's recommendation values for wireless systems, the SAR-value, are just recommendations, and not safety levels. Since scientists observe biological effects at as low as 20 microWatts/kg, is it then really safe to irradiate humans with 2 W/kg (i.e., with 100,000 times stronger radiation!), which is the recommendation level for us? And, furthermore, it is very strange to see, over and over again, that highly relevant scientific information is suppressed or even left out in various official documents, as high up as at the governmental level of society. This is not something that the consumers will gain anything good from, and, still, the official declaration or explanation (from experts and politicians) very often is: "If we (=the experts) would let everything out in the open, people would be very scared and they would panic." Personally, I have never seen this happen, but instead I have frequently seen great disappointment from citizens who afterwards have realized they have been fooled by their own experts and their own politicians...

Another misunderstanding is the use of scientific publications (as the tobacco industry did for many years) as 'weights' to balance each other. But you can NEVER balance a report showing a negative health effect with one showing nothing! This is a misunderstanding which, unfortunately, is very often used both by the industrial representatives as well as official authorities. The general audience, naturally, easily is fooled by such an argumentation, but if you are bitten by a deadly poisonous snake, what good does it make for you that there are 100 million harmless snakes around?

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In many commentaries, debate articles and public lectures - for the last 20-30 years – I have urged that completely independent research projects must be inaugurated immediately to ensure our public health. These projects must be entirely independent of all types of commercial interests; public health cannot have a price-tag! It is also of paramount importance that scientists involved in such projects must be free of any carrier considerations and that the funding needed is covered to 100%, not 99% or less. This is the clear responsibility of the democratically elected body of every country.

Many wireless systems are close to beds, kitchens, playrooms, and similar locations. These wireless systems are never off, and the exposure is not voluntary. These wireless systems are being forced on citizens everywhere. Based on this, the inauguration of such wireless systems with grudging and involuntary exposure of millions to billions of human beings to pulsed microwave radiation should immediately be prohibited until 'the red flag' can be hauled down once and for all.

Your work is – to say the least – of the greatest importance. You may save lives, as well as protect the general health, for now and for the future. That is what counts.

It is a great honour to communicate with you and to have your expertise aboard the international arena! *GOOD LUCK!*

With my very best regards
Yours sincerely

Olle Johansson, assoc. professor

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