

Dear Shoreline Planning Committee:

This amendment is for the purpose to expedite 5G technology throughout our communities.

\* (Wireless Telecom Facilities Development Code Amendment).

I am totally against the deployment of 5G on the basis that it threatens the safety of not only humans, but wildlife, ie pollinators. You have no idea of the impacts as no long term study has ever been done. There is compelling research available now that warns of the continued increasing exposure to humans by microwave frequencies. Continuing to increase the microwave background exposure with out thinking in terms of the Precautionary Principle, puts all of us at risk.

The primary motivation of 5G by companies to ultimately connect "everything" to the Internet can only be for purposes of consumer control and company profits. The wireless industries usually tout imaginary and irrational benefits with no discussion of the risks to us as a society (includes babies, children, elderly, those with chronic illnesses), that include cyber-security threats, hacking vulnerability, microwave exposures reaching a tipping point to harm health of humans, wildlife, and trees.

The FCC still has not considered the tremendous potential of wired technologies (especially fiber optics) to provide higher data rates, greater cyber security, and greater safety for human health, and should not exclude them due to any cost comparisons with wireless technologies.

#### REFERENCES:

1. <https://www.ncbi.nlm.nih.gov/pubmed/27552133?dopt=Abstract#>
2. 5G at <https://en.wikipedia.org/wiki/5G>
3. Together, these scientists listed at this link have published over 2000 peer-reviewed research papers on this subject microwave exposure and health: <https://www.emfscientist.org/index.php/emf-scientist-appeal>
4. "Precautionary Principle," See <<http://www.sehn.org/ppfaqs.html>> ("When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.")

Regards,

Nancy Morris  
Shoreline, WA

## Oppose Development of Spectrum Frontiers 5G on Health Grounds

Submitted by Ronald M. Powell, Ph.D.

### Background of Ronald M. Powell Ph.D.

*I am a retired U.S. Government career scientist (Ph.D., Applied Physics, Harvard University, 1975). During my Government career, I worked for the Executive Office of the President, the National Science Foundation, and the National Institute of Standards and Technology. For those organizations, respectively, I addressed Federal research and development program evaluation, energy policy research, and measurement development in support of the electronics and electrical-equipment industries and the biomedical research community. I currently interact with other scientists and with physicians around the world on the impact of electromagnetic fields on human health.*

### Why Oppose 5G?

#### **The National Toxicology Program at NIH has demonstrated that cell phone radiation causes cancer.**

The National Toxicology Program (NTP) at the National Institutes of Health (NIH) has just published the “Partial Findings” of a \$28 million multi-year study of the impact of cell phone radiation on human health. The NTP study found a causal relationship between the radiofrequency radiation emitted by cell phones and the occurrence of malignant brain cancer (glioma) and benign nerve tumors (schwannomas) of the heart in male rats.

Description of NTP study: <http://ntp.niehs.nih.gov/results/areas/cellphones/index.html>

Published “Partial Findings” of the NTP study: <http://biorxiv.org/content/early/2016/05/26/055699>

Informative Discussion of the NTP study: <http://ehtrust.org/science/facts-national-toxicology-program-cellphone-rat-cancer-study>

The NTP regarded its findings as so important to world health that it issued the “Partial Findings” as soon as it could (May 2016) and formally presented those findings at an international conference (BioEM2016, June 2016) attended by 300 scientists from 41 countries.

<http://www.alphagalileo.org/ViewItem.aspx?ItemId=164837&CultureCode=en>

#### **The International Agency for Research on Cancer at WHO has classified radiofrequency radiation as a possible human carcinogen.**

The NTP study reinforces the classification made in 2011, by the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO), of radiofrequency radiation, including specifically radiation from cell phones, as a Group 2B carcinogen (possible carcinogen for humans) because of the associated

occurrence of brain cancer (glioma) and acoustic neuroma (a benign tumor of the auditory nerve) which is a form of schwannoma.

[http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf)

In fact, the findings of the NTP study, in combination with the findings of other studies conducted since 2011, have greatly increased the likelihood that the IARC will raise its classification of radiofrequency radiation to Group 2A (probable carcinogen for humans) or even to Group 1 (known carcinogen for humans) in the near future.

### **The world's scientists have appealed to the United Nations and the World Health Organization to warn the world population about the harm to health caused by radiofrequency radiation from wireless devices.**

220 scientists from 41 nations submitted an international appeal to the United Nations and to the World Health Organization in May 2015. These scientists seek improved protection of the public from harm from the radiation produced by many wireless sources, including "cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors" among others. Together, these scientists have published over 2000 peer-reviewed research papers on this subject.

<https://www.emfscientist.org/index.php/emf-scientist-appeal>

### **The most detailed and comprehensive analyses of international biomedical research show a broad variety of adverse health effects from exposure to radiofrequency radiation.**

The health risks posed by continued expansion of the use of radiofrequency radiation in wireless devices are not limited to cancer, as devastating as that consequence is. The much broader range of health effects was reviewed in immense detail in the BioInitiative Report of 2012. This 1479-page review considered about 1800 biomedical research publications, most issued in the previous five years. The BioInitiative 2012 Report was prepared by an international body of 29 experts, heavy in Ph.D.s and M.D.s, from 10 countries, including the USA which contributed the most experts (10). The review concludes that "The continued rollout of wireless technologies and devices puts global public health at risk from unrestricted wireless commerce unless new, and far lower[,] exposure limits and strong precautionary warnings for their use are implemented."

BioInitiative Working Group, Cindy Sage, M.A. and David O. Carpenter, M.D., Editors, BioInitiative Report: A Rationale for Biologically-based Public Exposure Standards for Electromagnetic Radiation, December 31, 2012 (<http://www.bioinitiative.org>).

### **Why is Spectrum Frontiers 5G so especially outrageous to the public?**

It would greatly extend FCC's current policy of the MANDATORY IRRADIATION OF THE PUBLIC without adequate prior study of the potential health impact and assurance of safety.

It would IRRADIATE EVERYONE, including the most vulnerable to harm from radiofrequency radiation: pregnant women, unborn children, young children, teenagers, men of reproductive age, the elderly,

the disabled, and the chronically ill.

It would likely rely on the 1996 Telecommunications Act to continue to deny state and local governments and municipalities the right to bar the installation of wireless technology on environmental/health grounds, perhaps the greatest offense to local rule of all time.

It would likely rely on the FCC's current outdated, excessively permissive, and thus widely criticized, radiation-exposure guidelines that enable many parties to make false claims of safety for wireless products. Those guidelines are based primarily on a 30-year-old analysis by the National Council on Radiation Protection and Measurements (NCRP),<sup>1</sup> many years before the emergence of most of the digital wireless technology in use today. And the FCC's proposed move to 5G would offer no further study of safety, even though the new study by the National Toxicology Program at NIH has already found those same FCC guidelines unprotective.

It would set a goal of irradiating all environments, including the insides of homes, whether single family homes, townhouses, or apartments, ending any remnant of the notion that "your home is your castle" in which you are supposed to be safe and have a measure of control of your environment. Specifically, the proposed 5G technology would blast through walls and cribs just as the current wireless technologies do. The result would be to drive even more people out of their homes than are already being displaced by the current wireless technologies.

It would force cell antennas onto residential streets, bringing the threat even more up close and personal to the public.

It would bypass all current studies endeavoring to determine if radiofrequency radiation is a factor in the explosive growth of major health conditions, such as autism, attention deficit hyperactivity disorder (ADHD), and Alzheimers disease, that are ruining the lives of so many people, from their youngest years to their oldest years.

It would increase the prospect for exploding health care costs, with a further worsening of the national debt, and with no clear assignment of responsibility to the providers of the harmful radiation. They would continue to export the costs of the harm that their wireless products cause to society at large.

It would totally ignore the rapidly growing international biomedical research literature that demonstrates that radiofrequency radiation has a host of adverse effects on human health (and animal, insect, and plant health, too) at levels far below the current FCC exposure guidelines.

It would dismiss, as too expensive, the tremendous potential of wired technologies (especially fiber optics) to provide higher data rates, greater cyber security, and greater safety for human health, as if those benefits should be excluded from any cost comparisons with wireless technologies.

## **I urge you to oppose development of Spectrum Frontiers 5G.**

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<sup>1</sup> Federal Communications Commission, Office Engineering & Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01, page 64 (August 1997). See the last paragraph on the page to find this statement: "The FCC-adopted limits for Maximum Permissible Exposure (MPE) are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, Maryland 20814 ([http://transition.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet65/oet65.pdf](http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)).