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**United States District Court**

**District of Oregon**

**Portland Division**

**Alexandra Helene Morrison**, by and through  
her Guardian *ad litem* and father,  
David Mark Morrison, and  
**David Mark Morrison**, individually,

Civil Action No.

v.

**Declaration of  
Lloyd Morgan**

**Portland Public Schools,**

Defendant.

I, Lloyd Morgan, under penalty of perjury pursuant to 28 U.S.C. § 1746, hereby make the following declaration in support of a preliminary and permanent injunction enjoining Portland Public Schools' use of WI-FI:

1. I am an electronic engineer by training with 38 years of industrial experience to the Vice Presidential level (retired 2002).

2. I am a member of international science organization the Bioelectromagnetics Society (see [www.bems.org](http://www.bems.org)), and Senior Research Fellow, Environmental Health Trust<sup>1</sup> (EHT) (<http://www.environmentalhealthtrust.org/>), Scientific Advisor, EM Radiation Research Trust (<http://www.radiationresearch.org/>), an investigator of a childhood leukemia cluster in Fallon, Nevada with a team from the University of California, San Francisco, USA, a columnist for Powerwatch (<http://www.powerwatch.org.uk/columns/morgan/index.asp>), and a brain tumor survivor.

3. Along with co-authors my latest science paper Scientific Panel on Electromagnetic Field Health Risks: Consensus Points, Recommendations, and Rationales (Reviews on Environmental Health Vol. 25, No. 4, 2010) calls for new biologically based exposure limits. It also recommends, based on scientific findings of harm, lowering the exposure limits. For example, 'Based on power density measurements, the Seletun Scientific Panel finds sufficient evidence for a whole-body scientific bench-mark for adverse health effect exists down to ... 8.5  $\mu\text{W}/\text{cm}^2$  based on at least 17 scientific studies reporting low-intensity effects on humans.' The current FCC exposure limit is 1,000  $\mu\text{W}/\text{cm}^2$ .

4. A previous science paper *Estimating the Risk of Brain Tumors from Cellphone Use: Published Case-Control Studies* is available on-line from Pathophysiology (<http://www.sciencedirect.com/science/publication?issn=09284680&volume=16&issue=2-3>) reports that the Interphone studies on the risk of brain tumor from cellphone use has a systemic-protective-skew that result in an underestimation of the risk of brain tumors.

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<sup>1</sup> A nonprofit organization dedicated to educating individuals, professionals and communities about controllable environmental health risks and policy changes needed to reduce those risks.

5. I am a co-author on two previously published epidemiological papers: *Long-term use of cellular phones and brain tumours: increased risk associated with use for > or =10 years.*<sup>2</sup> This paper was awarded ‘one of the top ten articles for 2007’ in the journal of Occupational and Environmental Medicine, <http://oem.bmj.com/misc/topten07.dtl>, and, *A new electromagnetic exposure metric: high frequency voltage transients associated with increased cancer incidence in teachers in a California school.*<sup>3</sup>

6. I am the lead author of the Report, *Cellphones and Brain Tumors: 15 Reasons for Concern* (<http://www.radiationresearch.org/pdfs/15reasons.asp>), which was widely distributed to the media and government officials August 25, 2009.

7. In November, 2009, I was a distinguished member of a Scientific Panel at the International EMF Conference in Stavanger, Norway: ‘Electromagnetic fields and health: Science pointing to new biologically-based guidelines,’ whose task was to arrived at new EMF exposure limits based on scientific findings of harm (see 3 above).

8. Since 1995, I have been involved in the study of exposure to electromagnetic fields and resultant health problems. Beginning in 1995, after recovering from a brain tumor, and each year since 1995, I have attended multiple science meetings including, among others, the Bioelectromagnetics Society, the Neuro-Oncology Society, the American Academy of Environmental Medicine, the 2000 Consensus Conference [to designate all brain tumor types with their appropriate codes), and the Brain Tumor Epidemiology Consortium. I have presented at the Marin County (California) Dept. of Health Services in 2003, the American Academy of Environmental Medicine in 2004, the Bioelectromagnetics Society in 2005, 2008, 2009, 2010

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<sup>2</sup> Hardell L, Carlberg M, Söderqvist F, Mild KH, Morgan LL. Long-term use of cellular phones and brain tumours: increased risk associated with use for > or =10 years. *Occup Environ Med.* 2007 Sep; 64(9):626-32.

<sup>3</sup> Milham S and Morgan LL. A new electromagnetic exposure metric: high frequency voltage transients associated with increased cancer incidence in teachers in a California school’ *Am J Ind Med.* 2008 Aug; 51(8):579-86.

and will give two presentations in June, 2011, the Children with Leukemia conference in 2008, and the Radiation Research Trust (RRT), International Conference, EMF & Health, A Global Issue, in Sept. 2008, and to physicians and health advocate organizations.

9. I authored two legislative Acts concerning brain tumors, one in California (passed into law in 2000), and the other in the US Congress (passed into law in 2002). I currently have another Bill that is soon to be introduced into the US Congress, the National Childhood Brain Tumor Prevention Network Act mandating a comprehensive study into the causes of the leading cause of cancer death in children, brain tumors.

10. It is generally accepted within the relevant scientific community and has been established that many bioeffects and adverse health effects occur at far lower levels of RF exposure than those that cause measurable heating. Educating by way of the Internet via cabled systems does not increase exposure.

11. Selected studies showing health effects from microwave radiation:

a. Independently funded Swedish studies led by Dr. Lennart Hardell (cellphones & cordless phones):

i. Hardell *et al.*, 2006. Pooled analysis of two case-control studies on the use of cellular and cordless telephones and the risk of benign brain tumours diagnosed during 1997-2003.

1. >1000 hours of cellphone use, 210% increase risk of acoustic neuroma

ii. Hardell *et al.*, 2006. Pooled analysis of two case-control studies on use of cellular and cordless telephones and the risk for malignant brain tumours diagnosed in 1997-2003.

1. >2000 hours of cellphone use, 270% increased risk of brain cancer.

- iii. Hansson Mild *et al.*, 2007. Pooled Analysis of Two Swedish Case–Control Studies on the Use of Mobile and Cordless Telephones and the Risk of Brain Tumours Diagnosed During 1997–2003.
  - 1. For every year of cellphone, the risk of high-grade brain cancer increases by 11%.
- iv. Hardell & Carlberg. 2009. Mobile phones, cordless phones and the risk for brain tumours.
  - 1. First use of cellphone as a teenager, 580% increased of ipsilateral brain cancer;
  - 2. First use of cellphone between 20-49 years, 150% increased risk of ipsilateral brain cancer.
- b. Industry funded Interphone study:
  - i. Lönn *et al.*, 2004. Mobile Phone Use and the Risk of Acoustic Neuroma.
    - 1. >10 years of cellphone use, 290% increase ipsilateral increased risk of acoustic neuroma.
  - ii. Hepworth et al. 2006. Mobile phone use and risk of glioma in adults: case-control study.
    - 1. 24% increased risk of ipsilateral brain cancer.
  - iii. The Interphone Study Group. 2010. Brain tumour risk in relation to mobile telephone use: results of the INTERPHONE international case–control study.
    - 1. >10 years of cellphone use, 118% increased risk of brain cancer compared to cellphone use of 1-1.9 years.

- c. Human Male Fertility Studies:
  - i. Hardell *et al.*, 2007. Use of cellular and cordless telephones and risk of testicular cancer.
    - 1. 80% risk, kept in left pocket=left testicle, right pocket=right testicle.
  - ii. Multiple human studies showing reduced sperm count and severe damage to surviving sperm.
  - iii. Multiple animal studies showing severely damaged sperm.
- d. Cell Phones and Brain Tumors 15 Reasons for Concern 2009 (<http://www.radiationresearch.org/pdfs/15reasons.asp>).
- e. Animals studies
  - i. Consistent findings of DNA damage;
  - ii. Consistent findings of Blood-Brain Barrier (BBB) leakage.
- f. REFLEX Study of human cells exposed to cellphone microwave radiation:
  - i. Consistent findings of DNA mutation as low as 3% of the FCC exposure limit.
- g. Salivary gland located in the cheek (parotid gland):
  - i. Sadetzki *et al.*, 2008 (Israeli Interphone). Cellular Phone Use and Risk of Benign and Malignant Parotid Gland Tumors—A Nationwide Case-Control Study.
    - 1. >10 years, 89% increased risk of parotid gland tumors.
  - ii. Duan Y, *et al.*, 2010. Correlation between cellular phone use and epithelial parotid gland malignancies.
    - 1. >2.5 hours/day of cellphone use, >3,000% increased risk
    - 2. The magnitude of the risk of parotid gland tumors found in the Duan Y, *et al.* study on the risk of parotid gland cancer from

cellphone use were of the same magnitude as the risk of lung cancer from smoking.

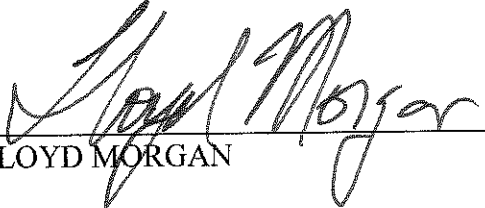
h. Swisscom patent to reduce power from cordless phones. 2004

i. Need for patent: 'The risk of damage to health through electrosmog has also become better understood as a result of more recent studies and improved studies. When, for example, human blood cells are irradiated with electromagnetic fields, clear damage to hereditary material has been demonstrated and there have been indications of an increased cancer risk.'

12. Exposure standard are based on a false premise that the only biological effect from microwave radiation is heating.

13. Portland Public Schools' use of WI-FI is causing and will continue to cause Alexandra Morrison, other students, and school staff and faculty adverse health effects and should be discontinued immediately.

Dated this 31 day of May, 2011.

  
LLOYD MORGAN