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**United States District Court**  
**District of Oregon**  
**Portland Division**

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

v.

**Portland Public Schools**,  
Defendant.

Civil Action No. 3:11-cv-00739-MO

**Plaintiffs' Response to  
Portland Public Schools'  
First Set of Interrogatories**

**TO: Portland Public Schools and its attorney, Mr. Bruce Campbell, Attorney at Law,  
Miller Nash, 3400 U.S. Bancorp Tower, 111 SW Fifth Avenue, Portland, Oregon  
967204-3699.**

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, AHM and David Mark Morrison (Plaintiffs) state their responses and objections to Defendant's First Set of Interrogatories as follows:

## **General Objections**

1. Plaintiffs object to the Interrogatories to the extent they require information or responses regarding individuals other than Plaintiffs.
2. Plaintiffs object to the Interrogatories, and any implied or express instruction or direction in the Interrogatories, that impose or seeks to impose burdens greater than those imposed by the Federal Rules of Civil Procedure.
3. Plaintiffs object to the Interrogatories to the extent they seek disclosure of information protected under the attorney-client privilege, the work-product doctrine, or any other applicable privilege or immunity.
4. Plaintiffs object to the Interrogatories to the extent they are overly broad, unduly burdensome, or not reasonably calculated to lead to the discovery of admissible evidence.
5. Plaintiffs reserve all objections as to the competence, relevance, materiality, admissibility, or privileged status of any information provided in response to these Interrogatories, unless Plaintiffs specifically states otherwise.
6. Plaintiffs object to the Interrogatories to the extent they seek information from persons Plaintiffs do not control.
7. Plaintiffs' general objections are applicable to, and included in, Plaintiffs' specific objections and answers set forth below.

## **Responses and Objections**

**REQUEST NO. 1:** Please identify the date, location, and period of exposure for each known occurrence of AHM being exposed to wireless internet ('Wi-Fi').

**RESPONSE TO REQUEST NO. 1:** The primary location and period of chronic exposure to pulsed modulated microwave radiation results from compulsory school attendance and upon the school's discretion for exposure. During non-school exposure times, background exposure is actively avoided including where wireless Internet is somewhat common in various environments, e.g., schools, stores, coffee shops, etc. It is, therefore, unduly burdensome to identify all of the locations that AHM has been exposed for short times.

**REQUEST NO. 2:** Please identify and describe all adverse health effects AHM has suffered as a result of exposure to Wi-Fi, including any medical treatment received, dates of treatment, and the identity of any treating professional.

**RESPONSE TO REQUEST NO. 2:** In addition to typical conditions (including electrical induction, nerve and muscle depolarization, headaches, ringing in ears, dizziness, nausea, feeling faint, difficulty concentrating, weakness, and fatigue) AHM suffers equivalencies described in Replies to Interrogatories No.'s 10, 11 and 13, and as identified by experts in support of injunction (such as calcium efflux from cell membranes, DNA fragmentation, leakage of the Blood Brain-Barrier, increased cancer risk, etc.).

**REQUEST NO. 3:** Please identify and describe all adverse health effects AHM has suffered as a result of exposure to any other form of non-ionizing radiation, including any medical treatment received, dates of treatment, and the identity of any treating professional.

**RESPONSE TO REQUEST NO. 3:** AHM suffers no chronic, statistically epidemiologically significant exposure except from exposure to pulsed modulated microwave radiation from Portland Public Schools use of WI-FI, per complaint. Also, see enclosed material supplied in response to interrogatory request no. 11.

**REQUEST NO. 4:** Please identify and describe all adverse health effects that other students, teachers, or personnel have suffered as a result of exposure to Wi-Fi at any school that AHM has attended. For each individual, please provide the individual's full name, location of exposure, duration of exposure, and resulting health effects.

**RESPONSE TO REQUEST NO. 4:** As the other students', and teachers', health records are privileged, Plaintiffs have not attempted to conduct broad surveys of symptoms reported by other students, teachers, and staff, however, reserve the right to conduct such surveys in order to answer this question prior to the close of discovery. Notwithstanding, see Response to Interrogatory No. 11, i.e., 'other \* \* \* etc.', defined as a *general* population necessarily opposite to the ideal type individual, represented here, individually, as AHM.

Additionally, the very physics of the interaction between the pulse-modulated microwave radiation of the deployed, microwave-oven wavelengths, with their harmonic resonance with the water molecule, and biologic systems, which are in large part water, requires harm to occur to every person and organism exposed. For example, cells that are living have electrical polarity, therefore when exposed to high-frequency fields, they will spin, while cells that are dead, which have lost their polarity, will not spin under such exposure conditions. Cells that are spinning are not as capable of carrying out normal efflux kinetics and healthy cell division. The variation in type and intensity of human response at the whole-body level depends upon various factors that have been named in the declarations, such that adverse human responses may differ, and may be more or less noticeable and more or less consciously attributable to their microwave-radiation provocation; but they will definitely occur in every human, especially those exposed constantly in the long-term, and where exposure is begun at an early age.

**REQUEST NO. 5:** Please identify all electrical devices located or used in Plaintiffs' home, including but not limited to, all appliances, personal computers, laptop computers, telephones, cellular telephones, stereo systems, and personal digital devices.

**RESPONSE TO REQUEST NO. 5:** There are plug outlets in every room that have all been tested with a StetzerizerMicrosurge meter. The ‘dirty electricity’ from the house wiring has been mediated with Stetzer filters where necessary to bring the ‘dirty electricity’ level within the house to a ‘healthy’ recommended level. We have an electric stove and refrigerator in the kitchen and water heater out in the garage/down in the basement. We do not have a microwave oven. In the study/den/living room etc., there are the following: a record player, amplifier, two lap top computers (with the WI-FI drivers disabled), cabled printer, various standing and table lamps (no cfl bulbs) an electric blender, and a toaster.

Regarding higher-frequency, wireless devices, we do not have WI-FI; our Internet is hard wired. We do not use any DECT portable phones. We do not have or use cell phones, nor is there a television in the house.

**REQUEST NO. 6:** Please identify all other sources of non-ionizing or ionizing radiation to which AHM has been exposed, including but not limited to, magnetic resonance imaging, x-rays, and airplane travel.

**RESPONSE TO REQUEST NO. 6:** Plaintiffs object to this request as it is overly burdensome to document ‘all other sources’ of RF that AHM has been exposed to. Without waiving the foregoing objections, the bulk of AHM’s exposure to RF radiation, especially to microwave radiation, comes from WI-FI while at school. Additionally, when she was 2 months old, she had an x-ray(s) of her head taken due to a fall. We have also taken perhaps ten trips to Los Angeles, 5 to San Francisco, two trips to New York and one trip to Spain via airplane. Additionally, we have, just outside the kitchen door, a wireless ‘smart’ meter that PGE installed on the property without permission. That is the only wireless device on the property; however, I shielded and grounded the meter to prevent exposure. See also, response to Interrogatory No. 5.

**REQUEST NO. 7:** Please identify all schools that AHM has attended as a student.

**RESPONSE TO REQUEST NO. 7:** AHM attended the Mt. Tabor Co-operative Pre School. After that she went to the Arbor School in Tualatin, Oregon. However we removed her from the school when a cell phone tower was installed in the center of the school grounds on a play yard. From there she went to the Glencoe Primary School in Portland, Oregon. Glencoe is a public school. AHM is now attending the Mt. Tabor Middle School.

**REQUEST NO. 8:** Please identify all other institutions, including but not limited to, schools, libraries, churches, gymnasiums, and theaters, in which AHM has spent more than ten total hours in the past two years.

**RESPONSE TO REQUEST NO.8:** AHM has spent 10 or more total hours in the past two years in movie theaters. She does not use a gymnasium. I cannot think of other venues other than public buildings that she visits that have constant, pulse-modulated microwave radiation such as WI-FI or a nearby broadcast tower, except for an occasional visit to a library, post office, transportation center, etc.

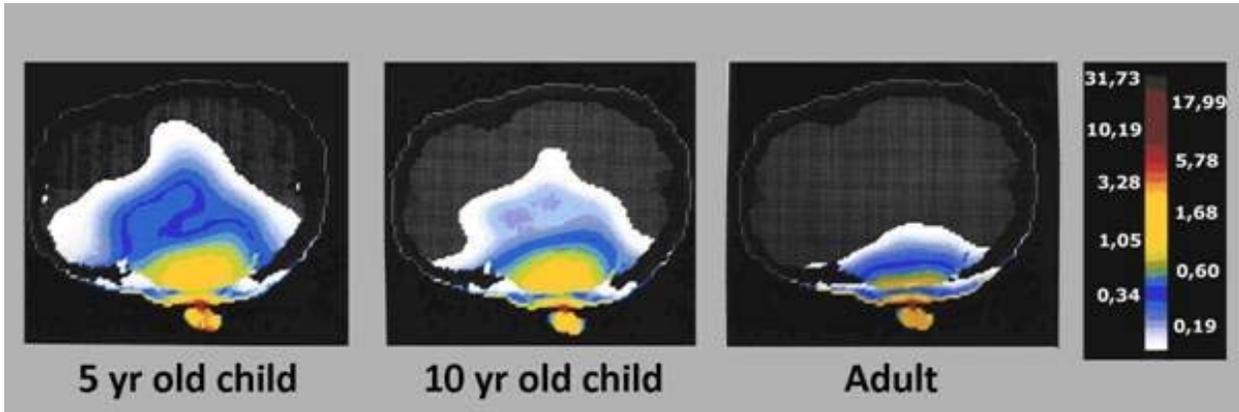
**REQUEST NO. 9:** Please identify the basis for your allegation that ‘Wi-Fi is an ongoing experiment by the National Toxicology Program.’ See Second Amended Complaint ¶ 33.

**RESPONSE TO REQUEST NO. 9** Plaintiffs will be dismissing their claim for experimentation, and, therefore, object based on relevance.

**REQUEST NO. 10** Please identify the basis for your allegation that ‘[c]hildren are more vulnerable [than adults] to radiofrequency fields because of the susceptibility of their developing nervous systems.’ See Second Amended Complaint ¶ 18.

**RESPONSE TO REQUEST NO. 10** Plaintiffs object to this request as the body of literature supporting this allegation is far too voluminous to cite. Without waiving the foregoing objection, Plaintiffs refer to the reasons provided in the Declarations in support of injection and/or:

1. See:



Depth of absorption of cell phone radiation in a 5-year old child, a 10-year old child, and in an adult from GSM cell phone radiation at 900 MHz. Color scale on right shows the SAR in Watts per kilogram. Gandhi *et al.*, IEEE Transactions on Microwave Theory and Techniques (1996); Quoted from Morgan *et al.*, *Cellphones and Brain Tumors – 15 Reasons for Concern*, at 25 (2009) and Ghandi, Morgan *et al.*, *Exposure Limits: The underestimation of absorbed cell phone radiation, especially in children*, (see 28 below).

2. See also, ‘Peyman and Gabriel worked with samples... regarded as a good substitute for human tissue [where the child-aged samples were found to]... have SAR conductivity ten times higher than that of an adult...’ Microwave News, 2010, No.3, pg.3, <http://www.microwavenews.com/children.adults.html>
3. And [children having] ‘developing nervous systems’, where: ‘\* \* \* wifi and wireless internet place... risk for neurological disease... and developmental impairments...’ (Press Release, 2011, Karolinska Institute, Department of Neurological Science, Stockholm, Sweden, [http://sagereports.com/smart-meter-rf/?page\\_id=382](http://sagereports.com/smart-meter-rf/?page_id=382)).
4. That, ‘\* \* \* pregnant women and children \* \* \* should avoid using [wireless devices] given the health effects \* \* \* ’ Y. Grigoriev, Dr. of Med. Sci, Chairman of Russian Nat’l Committee on Non-Ionizing Radiation Protection, Moscow, Russian Federation, quote found within the Karolinska Press Release above.

5. Where, ‘\*\*\* the brains of children lack neural integration and are not fully myelinated until the twenties \*\*\*’ Han, et al., *European Journal of Oncology*, ‘*Comparative Assessment of Models of Electromagnetic Absorption of the Head of Children...*’, Vol. 3, 2010, see <http://www.saferphonezone.com/site/wp-content/uploads/2011/04/2010EJOncArticle.pdf/>.
6. Moreover, the foregoing statement estoppes the School from asserting otherwise: ‘\*\*\* agencies have not \*\*\* [considered] risks \*\*\* that include children \*\*\* with appropriate protective exposure guidelines \*\*\*.’ Letter to US EMR Policy Institute, from Norbert Hankin, US Environmental Protection Agency, Center for Risk Assessment, July 16, 2002, [http://www.emrpolicy.org/litigation/case\\_law/docs/noi\\_epa\\_response.pdf](http://www.emrpolicy.org/litigation/case_law/docs/noi_epa_response.pdf).
7. ‘\*\*\* the SAR for a 10 year old is up to 153% higher than the SAR for the \*\*\* (heads [mannequin models] used in testing where they) \*\*\* represent the [most fit and hardened] 10% of military recruits \*\*\*.’ (Om Gandhi, Lloyd Morgan, et al., 2011, Pg.1, ‘*Exposure Limits: The Underestimation of Absorbed [Wireless] Radiation, Especially in Children*’, *Electromagnetic Biology and Medicine*, [www.bemri.org/publications/doc\\_download/389-exposure-limits-the-underestimation-of-absorbed-cell-phone-radiation-especially-in-children.html](http://www.bemri.org/publications/doc_download/389-exposure-limits-the-underestimation-of-absorbed-cell-phone-radiation-especially-in-children.html) –
8. ‘This \*\*\* should not be overlooked \*\*\* the potential for an impact by wireless communications technology on a child’s educational process, i.e., by possibly affecting learning ability. [It] stems from recent studies involving short-term exposures that demonstrated subtle effects on brain functions, produced by low-intensity, pulse-modulated radiofrequency radiation \*\*\* [E]ven a slight degree of impairment of learning ability over years of exposure...may negatively affect the quality of life that could be achieved by

these individuals as adults.’ Norbert Hankin PhD, EPA Environmental Scientist, December 19, 2000. See [http://www.safeschool.ca/Learning\\_Impairment.html](http://www.safeschool.ca/Learning_Impairment.html).

9. *Electromagnetic fields from mobile phones: health effect on children and Teenagers*, Russian National Committee on Non-ionizing Radiation Protection, April 2011 Moscow:

- a. For the first time in human evolution, the brain is daily exposed to modulated EMF at all developmental stages.
- b. Absorption of EMF in a child’s brain is greater than in adult phone users; larger brain areas including those responsible for intellectual development are exposed in a child’s brain.
- c. A child’s brain is undergoing development and its intellectual functions are maturing thus it is more susceptible to environmental hazards than adult’s brain.
- d. A child, due to its perception features, is unable to recognize the mobile phone as the source of harmful EMF exposure.
- e. The existing basic standards for RF EMF had been established before the large-scale dissemination of the mobile radio-telecommunications and are not accounted for the current daily RF exposure of human brain in the near-zone of mobile phone antenna. At present, there are no scientific data on possible effects from chronic long-term exposure of human brain to EMF (especially, in children and adolescents).
- f. Declaration of a mobile phone safety included in the ‘User’s Guide’, as a rule, is based on recommendations of a public organization registered outside Russia, which has no legal and moral responsibility for possible health effects. These recommendations are out of date and no longer correspond to the current exposure situation to RF EMF from mobile phones.

- g. The Specific Absorption Rate (SAR) used for declaration of a mobile phone safety, equal to 2 W/kg averaged over ten grams of brain tissue, in the opinion of the RNCNIRP, cannot be viewed as sufficiently scientifically grounded in this case, and its use does not guarantee protection of childhood and juvenile health.
- h. Global changes in the electromagnetic background caused by the development of modern mobile technologies, is an evolutionary factor requiring adaptation of children and adolescents to this harmful environmental factor.
- i. *Thus, for the first time in the human history, children using mobile telecommunications along with the adult population are included into the health risk group due to the RF EMF exposure. A situation has emerged that cumulative EMF exposure of children may be comparable to adult exposure and may be equal to the levels of occupational exposure of workers.*
- j. See also, ‘Children and Cell Phones: Time To Start Talking Sense’, May 3, 2010, Microwave News, <http://www.microwavenews.com/docs/Children.Adults.pdf>

**REQUEST NO. 11** Please identify the basis for your allegation that ‘Wi-Fi is genotoxic, carcinogenic, neurotoxic and otherwise causing ongoing harmful adverse health effects to AHM, other school children, teachers, and staff.’ See Second Amended Complaint ¶ 22.

**RESPONSE TO REQUEST NO. 11** Plaintiffs object to this request on the basis that there is a vast amount of studies to support these contentions. Without waiving the foregoing objections, Plaintiffs incorporate the Declarations in support of injunction and the foregoing:

- a. Human genotoxicity from pulse-modulated microwave radiation is further supported by proof that such microwave radiation "induces DNA fragmentation in constituent cells inside egg chambers" in *Drosophila melanogaster* in all stages of early and mid-oogenesis. Panagopoulos DJ,

Chavdoula ED, Nezis IP, Margaritis LH, Cell death induced by GSM 900 MHz and DCS 1800MHz mobile telephony radiation. *Mutation Research* 626:69– 78. (2007).

- b. DrNeil Cherry - Evidence That Electromagnetic Radiation is *Genotoxic* Aug 18, 2009 – [Neil.Cherry@ecan.govt.nz](mailto:Neil.Cherry@ecan.govt.nz) Human Sciences Department P.O. Box 84 ... safe level of zero exposure, consistent with *EMF/EMR* being *genotoxic*, <http://www.scribd.com/doc/18762027/Dr-Neil-Cherry-Evidence-That-Electromagnetic-Radiation-is-Genotoxic-2002>.
- c. Epidemiological studies of enhanced Brain/CNS Cancer incidence \* \* \*, [www.neilcherry.com/.../90\\_s2\\_EMR\\_Brain\\_cancer\\_paper09-02.pdf](http://www.neilcherry.com/.../90_s2_EMR_Brain_cancer_paper09-02.pdf), DrNeil Cherry 2002-2005 \* \* \* There is no safe threshold because of the *genotoxic* nature \* \* \* The evidence of *EMF/EMR* signals being *genotoxic* predicts that \* \* \* .
- d. Evidence of Neurological effects of Electromagnetic Radiation: Implications for degenerative disease and brain tumour from residential, occupational, cell site and cell phone exposures, Dr Neil Cherry O.N.Z.M, Associate Professor of Environmental Health, [http://www.neilcherry.com/documents/90\\_s6\\_EMR\\_Neurological\\_Report\\_10\\_Sept\\_2002.pdf](http://www.neilcherry.com/documents/90_s6_EMR_Neurological_Report_10_Sept_2002.pdf).
- e. ‘In the present work we \* \* \* observed a significant increase in DNA... break(age) [by the mechanistic exposure from] 2.45 GHz \* \* \* exposure \* \* \*’ Kesari, Behari and Kumar, 2010, ‘*Mutagenic Response of 2.45 GHz Radiation Exposure on Rat Brain*’ , Vol. 86, pp 334-343, pg. 340, *International Journal of Radiation Biology*, <http://informahealthcare.com/doi/abs/10.3109/09553000903564059>.
- f. ‘Carcinogenic’, as cell proliferation as a mechanistic rationale for carcinogens: ‘Microwaves at 2.45 GHz... show an indication of tumor promotion in brain cells...’ (Id., Kesari, Behari and Kumar, 2010, ‘*Mutagenic Response of 2.45 GHz Radiation Exposure on Rat Brain*’ , Vol.

86, pp 334-343, pg. 341, International Journal of Radiation Biology).

- g. Regarding the neurotoxicity of pulse-modulated microwave radiation, see quote of Norbert Hankin PhD, herein.
- h. Eskander *et al.* found that over six years, whether from base stations (infrastructure) or microwave-emitting devices, pulse-modulated RF/MW radiation produced effects on the pituitary-adrenal axis in humans, including significant decrease in human ACTH, cortisol, thyroid hormones, prolactin in young females and testosterone levels. Eskander *et al.* *How does long term exposure to base stations and mobile phones affect human hormone profiles?* Clinical Biochemistry, 2011 doi:10.1016/j.clinbiochem.2011.11.006.
- i. Buchner and Eger found in 2011 that adrenaline and noradrenaline increased substantially while dopamine decreased after residents began to be exposed to infrastructural levels of pulse-modulated microwave radiation, such as Portland schoolchildren receive. The initial levels were not restored even 1.5 years later. Buchner K, Eger H. *Changes of Clinically Important Neurotransmitters under the Influence of Modulated RF Fields – A Long-term Study under Real-life Conditions.* Umwelt-Mdizin-Gesellschaft 24(1):44-57, <http://buildingbiology.ca/pdf/rimbachstudy.pdf>.
- j. Regarding the genotoxicity of pulse-modulated microwave radiation, and in support of genotoxicity and neurotoxicity from the animal/insect research areas:
  - a. ‘The fact that electromagnetic stress [from pulse-modulated microwave radiation] induces DNA fragmentation in the oocyte (except of the nurse and follicle cells which anyway degenerate physiologically at stages 11–14) shows that the action of the electromagnetic stress is genotoxic and not just a shift of the physiological apoptotic stages in time \* \* \* It is again important to

emphasize that induced DNA fragmentation in the oocyte which undergoes meiosis during the last stages of oogenesis may result in heritable mutations upon DNA damage induction and repair, if not in cell death (Panagopoulos et al. 2007b) \* \* \*

- b. [W]e consider that similar effects on humans are possible for two reasons. First, insects are found to be more resistant than mammals, at least to ionising radiation (Abrahamson et al. 1973; Koval et al. 1977). Second, our results are in agreement with similar reported effects on mammals (although of course under different experimental conditions) (Lai and Singh 1995, 1996; Salford et al. 2003; Aitken et al. 2005).
- c. It is also possible that induced cell death on a number of brain cells can explain symptoms like headaches, fatigue, sleep disturbances etc., reported as ‘microwave syndrome’ (Navarro et al. 2003; Hutter et al. 2006) \* \* \*.
- d. In conclusion, we consider that our results imply the very cautious use of [pulse-modulated microwave radiation-emitting devices] at distances not shorter than 40 cm from the user’s head and a reconsideration of the current exposure criteria in order to restrict public exposure from base station antennas to intensities not higher than 1 microW/cm<sup>2</sup>. - Panagopoulos DJ et al, 2010a. Bioeffects of mobile telephony radiation in relation to its intensity or distance from the antenna. Int J Radiat Biol. 2010May; 86(5):345-57, <http://www.scribd.com/doc/30432628/Bio-Effects-of-Mobile-Telephony-Radiation-in-Relation-to-Its-Intensity-or-Distance>.
- k. ‘Neurotoxic’, as in neurotransmitter stressor and brain signal modulator, where ‘[stress hormone] impulses \* \* \* mediated by nerves [and] responsible for \* \* \* biosynthesis \* \* \* indicate(s) the dysregulated, chronic,

imbalance of the stress system\* \* \*.’ Klaus,Buchner and Horst Eger, 2011,(Rimbach Study) ‘*Changes of Clinically Important neurotransmitters under the Influence of Modulated RF Fields- A Long Term Study under Real Life Conditioning*’ 24(1):44-57, Pg. 1, Umwelt-Medizin-Gesellschaft. <http://buildingbiology.ca/pdf/rimbachstudy.pdf>.

- l. ‘Ongoing’, referring to normative syntax meaning—but not limited to-cumulative, where, ‘\* \* \* chronic exposure \* \* \* related to [observed] biomarkers ...[of] tumor promotion in brain cells \* \* \* Behari, Paulrau, 2007; Kesari, Behari and Kumar, 2010, ‘*Mutagenic Response of 2.45 GHz Radiation Exposure on Rat Brain,*’ Vol. 86, pp 334-343, pg. 335, International Journal of Radiation Biology.
- m. ‘Other(s)’- where, AHM’s harm stands as analogous equivalency to a Weber ‘ideal-type’ who has suffered harm, inside a ‘generalized population’ characterized by other(s), which practically includes the plural of AHM, or children, and necessarily, the generalized, or normative use, population to include teachers and staff.

**REQUEST NO. 12** [13] Please identify the basis for your allegation that ‘[s]ubstantial, cumulative, and progressive exposure to WI-FI during [AHM’s] developmental growth stages while at school deprives and burdens AHM’s life, liberty, and ability (in the case of children, the future ability) to procreate. . .’ See Second Amended Complaint ¶ 23.

**RESPONSE TO REQUEST NO. 12** [13]

**See Declarations in support of injunction, in particular that of Barrie Trower.**

**Additionally:**

‘...substantial...’, refers to sufficient exposure to cause for hypothesis and inquiry. See response to No. 11, including description in complain regarding a known controversy, where ‘known’ necessarily implies a temporal component that self-regulates the verb ‘...ongoing...’ (see response to No. 11) and indicates a body of work, therefore, substantial- as referenced and footnoted here and in the original complaint.

**‘...cumulative...’**, See Ongoing, response to No. 11, **‘and progressive exposure during growth stages...’**, refers to epidemiology concerns, where, herein, and as indicated by experts in support of injunction, ‘The effect on \* \* \* adrenaline and noradrenaline almost exclusively [seen] in children \* \* \*.’ Klaus, Buchner and Horst Eger, 2011, (Rimbach Study) *‘Changes of Clinically Important neurotransmitters under the Influence of Modulated RF Fields- A Long Term Study under Real Life Conditioning’* 24(1):44-57, Pgs. 6,8,9&11, Umwelt-Medizin-Gesellschaft (This study, which analyzed human urine samples taken before a cell tower was deployed in a Bavarian village and for 18 months afterward, shows that the chronically ill as well as children react more strongly than healthy adults).

**‘...while at school...’**, means AHM’s only statistically and epidemiologically significant exposure occurs while compulsorily at school.

**‘deprives and burdens,’ as in impairs access, etc.**

**‘life and liberty in the context of 14<sup>th</sup>** Amendment pursuit of freedoms and rights of choice.

**‘life... and ability’ in the case of unhindered pursuit into the future without impairment and access to healthy ‘procreation’**, where, ‘\* \* \* [intense] \* \* \* exposure to 2.45 GHz Microwave radiation \* \* \* [where] \* \* \* multiple mammary tumors occurred in exposed mice twice more frequently than in sham exposed.’ Yakymenko, Sidorik, et al., 2011, 33,2, 62-70, Pg. 66, *‘Long Term Exposure to Microwave Radiation Provokes Cancer Growth: Evidence from Radar and Mobile Communication Devices’* Experimental Oncology.

Where, ‘\* \* \* damage of DNA \* \* \* in spermatozoa \* \* \* under non-thermal microwave radiation ‘in vitro’ has been demonstrated [71].’ (Same article as [13.6](a), Yakymenko and Sidorik, 2011, Pg. 67.

And, ‘\* \* \* another group \* \* \* of females \* \* \* exposed for two, 30 minute periods per day for 18 months \* \* \* lymphoma risk was \* \* \* more than twice \* \* \* than in the matched control.’ (Same article as Yakymenko and Sidorik, 2011, Pg. 62)

And, ‘\* \* \* A recent study on reproductive patterns by Kesari and Behar (2009b) has revealed that microwave exposure and 2.45 Ghz decreases sperm count, increases apoptosis and affects the level of antioxidant enzymes.’ (see pg. 334).

And, ‘\* \* \* combined effect [of] wifi and wireless internet place(s) risk for cancer, neurological disease and reproductive and developmental impairments.’ Press Release, Karolinska Institute, Department of NeuroScience, Stockholm Sweden, February 3, 2011, <http://electromagnetichealth.org/wp-content/uploads/2011/03/Karolinska.pdf>.

Respectfully submitted this 28<sup>th</sup> day of December, 2011,

*/s/ Shawn E. Abrell*

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SHAWN E. ABRELL, WSB No. 41054  
*Lead Counsel for Plaintiffs, Pro Hac Vice*

## CERTIFICATE OF SERVICE

I hereby certify that I served the foregoing **Plaintiffs' Response to Portland Public Schools' First Set of Interrogatories** on:

Mr. Bruce Campbell  
Attorney at Law  
Miller Nash  
3400 U.S. Bancorp Tower  
111 SW Fifth Avenue  
Portland, Oregon 967204-3699  
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Of Attorneys for Portland Public Schools

- by e-mailing an electronic pdf version thereof at the above address;
- by mailing a copy thereof in a sealed, first-class postage prepaid envelope, addressed to each attorney's last-known address and depositing in the U.S. mail at Portland, Oregon on the date set forth below along with an electronic version via e-mail at the above address;
- by causing a copy thereof to be hand-delivered to said attorneys at each attorney's last-known office address on the date set forth below; or
- by faxing a copy thereof to each attorney at his last-known facsimile number on the date set forth below.

DATED this 28<sup>th</sup> day of December, 2011.

*/s/ Shawn E. Abrell*

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SHAWN E. ABRELL, WSB No. 41054  
*Lead Counsel for Plaintiffs, Pro Hac Vice*