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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.

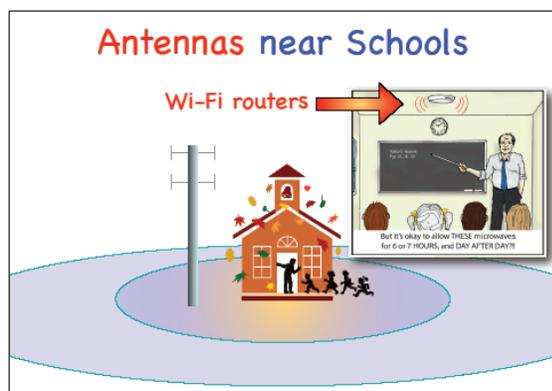
**Portland Public Schools,**

Defendant.

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

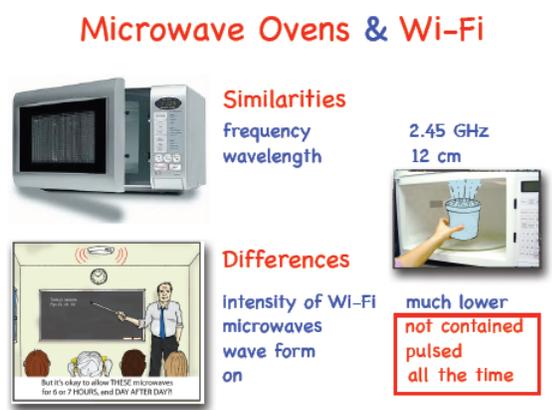
**Declaration of  
Dr. Magda Havas, B.Sc., Ph.D.  
Addendum D – Presentation**

## Addendum D



1.

We don't believe in putting antennas near schools, so why are we so willing to put antennas inside schools? That's right. Wi-Fi routers are microwave antennas.



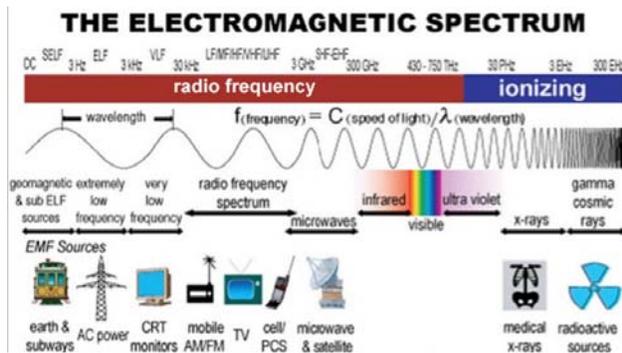
2.

What do microwave ovens and Wi-Fi routers have in common and how do they differ? Both use the same **frequency**, and both have the same **wavelength**. These are the ideal condition for heating water. They differ in that Wi-Fi routers use a **lower intensity** of radiation; the radiation is **not contained**; it consists of **pulsed waves** rather than continuous waves (more about that later); and the WiFi Router is **ON** all the time. For these 3 reasons WI-FI should not be used in schools.



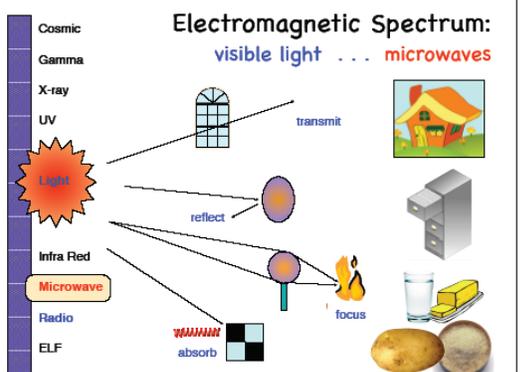
3.

Let's have a microwave cooking lesson. We can bake a potato in a microwave oven set at 100% power within 6 minutes. If we reduce the power to 50% it will take twice as long, or 12 minutes, to bake the potato. This is called the time-weighted exposure. Now, let's replace the potatoes with students and the microwave oven with a school. Students in school are exposed to microwave radiation for 6 h/d, 5d/w for 40 w each year. That comes to 1,200 hours a year. After 10-years they are exposed to microwave radiation for 12,000 hours! Let's put this 12,000 hour into perspective.



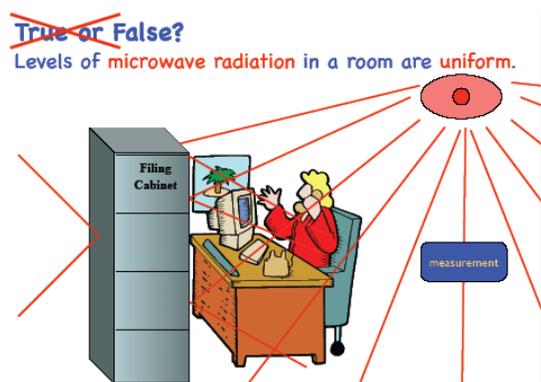
Here we have the electromagnetic spectrum that organizes electromagnetic energy according to frequency and wavelength, with low frequencies at the bottom and high frequencies at the top of this chart. Scientists have given names to different parts of the spectrum that have similar characteristics. At the bottom we have extremely low frequency electromagnetic fields. Then we have a band called radio frequency radiation that overlaps with microwaves and radar. Wi-Fi fits into this category at 2.4 GHz. At even higher frequencies we have ionizing radiation that is known to be carcinogenic. Both radio frequency and extremely low frequency fields are classified as possibly carcinogenic by the WHO.

4.



Light is part of the electromagnetic spectrum and microwave radiation has many of the same characteristics as light. For example, light can be transmitted through windows; reflected or focused by mirrors and glass, and absorbed by dark colors. Similarly, microwaves can be transmitted through buildings, reflected and focused by metal, and they can be absorbed by water and fat. That is why we can cook a potato in a microwave oven but we can't cook dry rice.

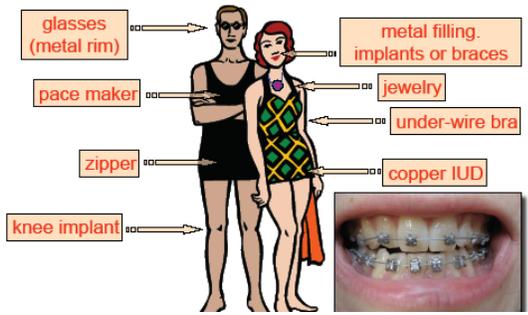
5.



A metal filing cabinet (as well as other metal objects) can either decrease or increase your exposure to Wi-Fi radiation depending on its location relative to you and the router. Taking a measurement in the middle of the room will NOT give the same reading as taking a measurement near a metal object, near your computer, or near the router.

6.

... Metals reflect, block, focus RF radiation.

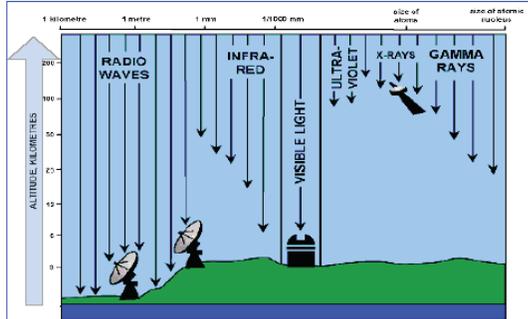


Metal objects on or in your body will also reflect, block or focus microwave radiation. That is why some sensitive people are unable to wear jewelry. A student with a mouth-full of metal braces standing near a router is likely to have higher radiation exposure in the head than a student without braces.

7.

~~True or False?~~

Natural radio waves much stronger than man-made sources.



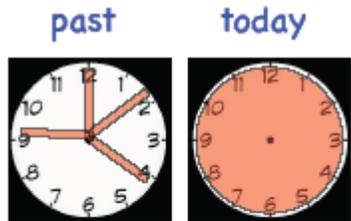
This graph shows altitude above sea-level. Ionizing radiation is largely absorbed by the upper atmosphere and very little reaches the earth's surface. The same is true for infra-red radiation. Both light and radio frequency radiation reach the earth's surface. So we are exposed to radio frequencies coming from outer space but these sources are VERY weak. That is why we need large radio telescopes to detect the energy. These microwaves are like whispers from outer space. A cell phone within 10 km of one of these receivers is similar to a shout and would interfere with the signals coming from space. That is why radio telescopes often have an exclusive zone surrounding them to minimize this manmade interference.

[This is animated]

8.

Major changes in our exposure ...

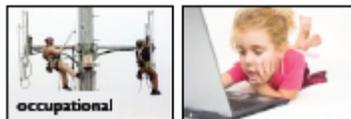
1. intermittent to constant



2. radiation closer to home



3. younger people exposed

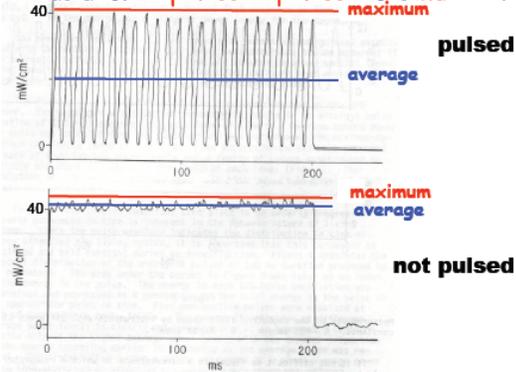


Here are some of the major changes in our exposure. **1.** In the past our exposure was **intermittent**. Today it is **constant**. **2.** The radiation is no longer restricted to **military bases** and **airports**. **3.** Today some people have **transmitters inside their homes**. In the past, exposure was limited to a **few occupations**. Today, **infants & children** are exposed.

9.

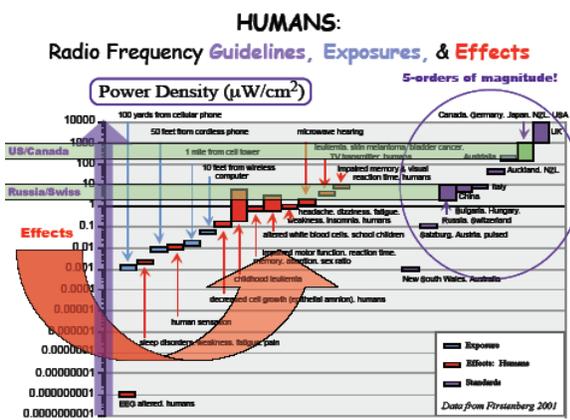
**True or False?**

Wi-Fi radiation is **pulsed** ... **pulsed** more harmful.



We don't know **all** the reasons why pulsed radiation is more harmful than non-pulsed radiation, but one reason is the way it's **measured**. At the bottom we have radiation that is **not pulsed**. The **maximum** value and the **average** value are quite **similar**. With **pulsed radiation** the maximum or **peak** value is much **higher** than the **average** value and since many health authorities measure only **average** values they **underestimate** exposure considerably.

10.

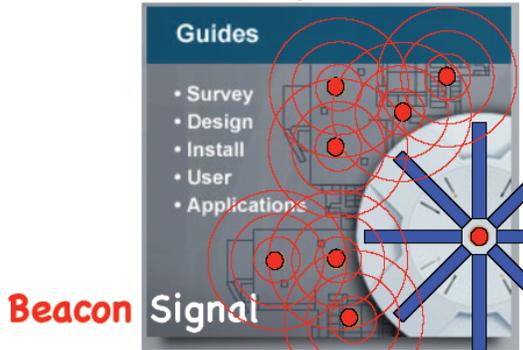


The **intensity** of radio frequency radiation can be measured using **power density**. **Guidelines** in various countries differ 5-orders of magnitude or by a 100,000 units. This is **unheard of for chemical toxicants** and for **ionizing radiation** where **standards globally** are **quite similar**. The **worst** guidelines are in the UK but **Canada** and the **US** are not far behind. Guidelines for **Russia** and **Switzerland** are at least 100 times more protective than US guidelines. These guidelines are **NOT effective** because **adverse effects** occur at **much lower levels** of exposure, as shown in red.

11.

**True or False?**

Wi-Fi base stations constantly emit radiation.



Wi-Fi **base stations** or **routers** in schools have **multiple antennas** (shown in **blue**). These antennas emit a **beacon signal** (shown in **red**). The routers are placed at various locations as shown in this floor plan. Each **router** emits microwave radiation that is **always on**. With **multiple routers** the entire school is **blanketed with microwave radiation**.

12.

~~True or False?~~

More users . . . **higher radiation.**



And the **closer** students are to each other, the **higher** their **exposure.**



13.

~~True or False?~~ . . . long-term, low-level **microwave exposure harms rats**

U.S. Air Force ... \$4.5 million ... completed 1984



**Wave:**  
2450 MHz, Pulsed

**Intensity:**  
0.4 -0.15 W/kg

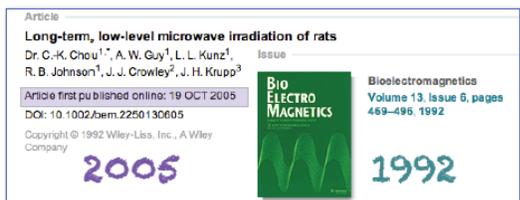
**Duration:**  
21.5 h/day  
25 months

The **U.S. Air Force** completed a study in **1984** at a cost of **\$4.5** million dollars. They exposed rats to **pulsed 2.45 GHz** frequencies, which is the same as **Wi-Fi**, at levels **well below US** guidelines, for **21.5 h** daily for **25** months.

14.

~~True or False?~~ . . . long-term, low-level **microwave exposure harms rats**

U.S. Air Force ... \$4.5 million ... completed 1984



The results were published in **1992** and became available on the Internet in **2005.**

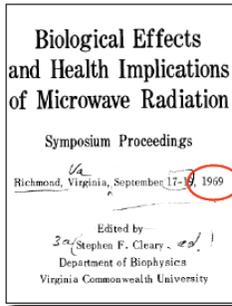
15.





~~True or False?~~

Microwave workers experience heart problems



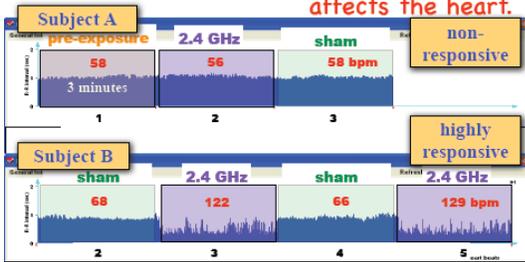
"In the interest of occupational hygiene, many Soviet investigators (and at least one U.S. researcher) have recommended that cardiovascular abnormalities be used as screening criteria to exclude people from occupations involving radio-frequency exposures."

Studies on the health effects of microwave radiation go back decades although some of the earlier studies were classified. Read what the authors write in this symposium proceedings that was published in 1969. Scientists knew 42 years ago that RFR affects the heart!

22.

~~True or False?~~

Radiation from a 2.4 GHz (cordless phone) affects the heart.



tachycardia . . . 0.3% of SC6

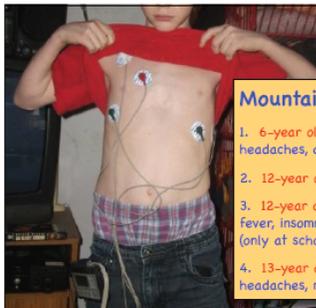
This was a double blind study that has been published in a peer-reviewed journal. Subject A was wearing a heart monitor and was exposed for three 3-minute periods to radiation from a cordless phone or to sham exposure. The heart rate remained relatively constant 58, 56, and 58 beats per minute. This subject was exposed during the second time-interval but does not respond to the provocation. Subject A is non-responsive. Subject B has a rapid heart rate during intervals 3 and 5, which coincide with exposure to the cordless phone. This subject experienced tachycardia, a rapid heart rate, and is highly reactive. Exposure was at levels less than 1% of Health Canada's safety code 6.

[I will demonstrate this direct affect with a WI-FI router]

23.

~~True or False?~~

Students experiencing heart irregularities at school



Student with heart monitor.

Mountain View School:

1. 6-year old girl, "musical heart", headaches, dizziness only at school.
2. 12-year old boy, tachycardia.
3. 12-year old girl, nausea, vomiting, no fever, insomnia, blurred vision, tachycardia (only at school).
4. 13-year old boy, heart pounding, insomnia, headaches, moved & symptoms abated.

Several students have visited their pediatric cardiologist and have worn heart monitors to school. Here are the symptoms they experienced.

24.

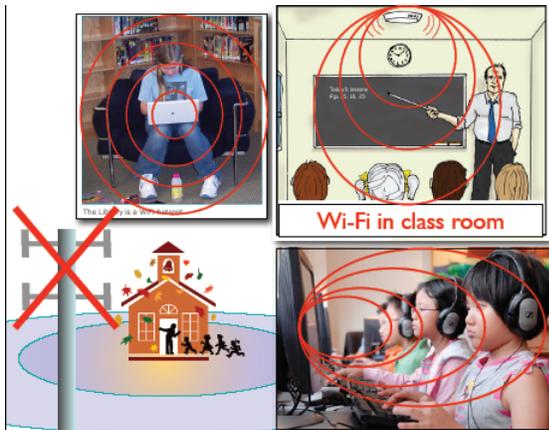
~~True or False?~~

Students are getting sick in schools with Wi-Fi.



25.

Some students at Mountainview school are complaining of poor health only while at school. Mountainview school has Wi-Fi installed. To view this video, go to <http://www.youtube.com/watch?v=h-TJXRc5fzo>



26.

Cell phone antennas should not be placed near schools and Wi-Fi routers should not be placed inside schools.

Parliamentary Assembly Council of Europe

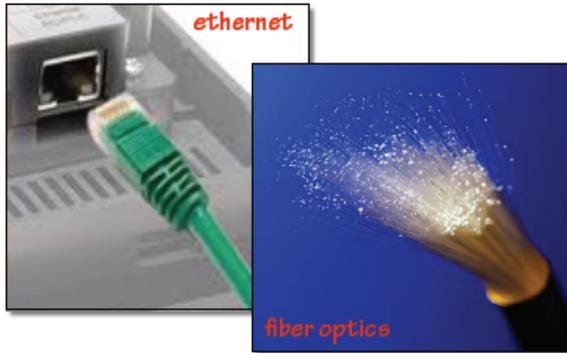


8.3.2. for children in general, and particularly in schools and classrooms, give preference to **wired Internet connections**, and strictly regulate the use of mobile phones by schoolchildren on school premises;

27.

The Parliamentary Assembly Council of Europe agrees about wired connections for Internet access in schools.

### Three wired alternatives to wireless



There **wired alternatives** to wireless including **Ethernet**, which Mount Tabor Middle School already has, the Wi-Fi is redundant.

28.

### In the end . . .



*All truth goes through three stages.*

- ♦ *First it is ridiculed.*
- ♦ *Then it is violently opposed.*
- ♦ *Finally, it is accepted as self-evident.*

*-Schopenhauer*

can we afford to make mistakes?

29.

Note: I have information to believe there is a video in existence showing ~2000 shows cells under a microscope under exposure to high-frequency RF fields. The living cells spin under such exposure because they have polarity; while dead cells, having lost their polarity, do not spin but are still. Efforts are being made at this time to locate that video, which I will incorporate into this presentation.