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To: LAUSD trustees, teachers, and parents

Re: Open Letter: Wi-Fi in the LAUSD related to Agenda Item 12. Please read this letter into the Record.

I am a professor in a Canadian University where I do research on the biological effects of radio frequency radiation. I implore you to NOT make the same mistake that we are currently making in Canada, namely installing wireless internet in all of our schools and thus exposing students and their teachers to microwave radiation all day and every school day.

The s**afest way to connect to the internet in the classroom** is through either Ethernet cable or through fiber optics. The worst way to connect to the internet from a health perspective is through Wi-Fi routers. However, if Wi-Fi routers are deployed in the classroom it is **essential** that the routers be turned off when not in use and/or turned down to minimize exposure of students and staff.

The **scientific evidence** clearly shows that microwave radiation at levels well below the Federal Communication Commission (FCC) guidelines and at levels now commonly found inside classrooms with Wi-Fi routers causes cancer in laboratory animals, causes heart palpitations in sensitive adults, causes reduced sperm motility and viability, and is associated with symptoms of electrosensitivity that include–but are not limited to–cognitive dysfunction, pain, fatigue, mood disorders (depression, anxiety, irritability), dizziness, nausea, weakness, skin problems, and tinnitus.

As an example, we did a study that showed that microwave radiation (pulsed 2.4 GHz frequency) at levels less than 0.5% of the FCC guidelines caused either an **irregular** or a **rapid heart rate** in adults who were sensitive to this radiation (Havas et al. 2010). See: http://www.youtube.com/watch?v=_EI9fZX4iww.

This heart abnormality is often associated with feelings of anxiety as well as pain or pressure in the chest similar to what one might experience during a heart attack. Children are likely to be much more sensitive than adults and students in Canadian schools with Wi-Fi are now complaining of heart palpitations and feelings of weakness and fatigue in the classroom. They feel well at home during the evening, weekend, and while on vacation. This is not school phobia

as many of these students used to enjoy school prior to the Wi-Fi being stalled. Students with metal braces on their teeth are more likely to be adversely affected as the metal in the mouth can cause radiation hotspots in the head. See: http://www.youtube.com/watch?v=h-TJXRc5fzo

Several students in one school board in Ontario have experienced **sudden cardiac arrest**, which is becoming increasingly common but poorly known outside of a narrow scientific community. As a result schools are now installing defibrillators (for sudden cardiac arrest) and removing microwave ovens (whose signal interferes with the Wi-Fi routers).

Teachers who complain of feeling ill in the classroom with Wi-Fi routers are often silenced. Many fear losing their jobs and are afraid to speak out. They suffer in silence until they are no longer able to tolerate the exposure and then they go on temporary or permanent sick leave, which can become a significant expense to the school district.

The current **guidelines for microwave radiation** are based on a heating effect of a healthy adult male (as they were originally designed for military personnel working near radar antennas). These guidelines were never designed nor intended to protect children and pregnant women. The guideline in the U.S. is calculated as the average exposure over a 30-minute period that does not raise the body temperature of tissue by 1 degree Celsius. The U.S. has no long-term guidelines and no biological guidelines for microwave radiation. The guidelines in Russia, Switzerland and many other countries are 100 times more protective than those in the United States. This simply does not make sense as the people in these countries are not necessarily more vulnerable. It seems that their government is taking greater precautions to protect its citizens.

Furthermore, in 2011 the World Health Organization classified radio frequency electromagnetic fields as a possible human carcinogen, which is a warning to governments around the world. Why would we want to place a possible human carcinogen in the classroom?

It seems that the scientific community is several decades ahead of policy and there are forces in our society that do not want the public to know that this radiation may be harmful. Indeed, history is simply repeating itself with microwave radiation just as it did with cigarette smoking, asbestos, lead and DDT.

- We know that cigarette smoking is harmful and no longer allow it in many public places. Yet it took decades after we had solid scientific evidence that smoking caused heart disease and lung cancer before the Surgeon General made a public statement on the harmful effects of smoking.
- We know that some children suffer from peanut allergies and many schools are now nut-free.
- We know that asbestos is harmful to health and many schools have removed asbestos and we no longer use it to insulate homes.
- We have learned that lead causes learning problems in children and no longer add lead to paint or to gasoline. Indeed if we receive toys from China with leaded white paint, the toys are returned.

- We know that DDT is harmful to birds and other top carnivores (including humans) and have restricted its use in North America.

How long will it take intelligent school board trustees, parents and teachers who would not knowingly do anything to jeopardize the health of students to recognize that microwave radiation in the classroom is a dumb idea. My scientific colleagues and I recognize the harmful effects of long-term exposure to microwave radiation and we simply cannot believe how quickly those who do not understand fully the ramifications of their uninformed decisions are deploying this technology.

I ask you to watch two videos to help you decide if microwave in the classroom is a good idea.

The first video provides you with information on the type of Wi-Fi routers used in the classroom, how they differ from the Wi-Fi routers used at home and what the science shows on how harmful they are: http://www.youtube.com/watch?v=6v75sKAUFdc

The second video is an interview with students and parents about Wi-Fi in a school in Ontario and how the school responded to concerns raised about the health effects of this radiation. http://www.youtube.com/watch?v=KN7VetsCR2I

It is my sincere wish that we do the best we can to enhance the learning opportunities for all children and that we do so without jeopardizing their health.

Respectfully submitted,
Dr. Magda Havas,
February 10, 2013.

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