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Chairperson and Trustees
Kawartha Pine Ridge District School Board
Education Centre
1994 Fisher Drive
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Open Letter: WiFi in Schools is both Negligent and Dangerous.

Chairperson and Trustees,

I write this open letter to bring your attention to the potential harm you may be doing to both students and staff at schools in the Kawartha Pine Ridge District School Board because of your eager rush to install wireless internet access. By your actions, you will expose young children (and their teachers) to microwave radiation for **6 hours** each school day, **5 days** a week, for **40 weeks** each year. This exposure will be **1200 hours** each year, year after year. Never in history have children been exposed to such high levels of microwave radiation for so long. No studies have tested either the short-term or long-term effects of this microwave exposure on children. Indeed, if I wanted to conduct such human experiments at Trent University, they would be deemed unethical and I would be denied permission to proceed!

While you have been assured by Health Canada that this radiation is safe as long as exposure is below Safety Code 6 (SC6) Guidelines (**1000 microW/cm²** for microwave radiation), be aware that the Canadian guideline is based on a short-term (**6-minute average**) exposure to protect against **heating** a 6-foot, 200-pound adult male! Also be aware that **SC6 Guidelines** are for federal buildings and **do not necessarily apply to schools**, although currently you may adopt their guidelines if you wish.

Other countries have more stringent guidelines than Canada. For example, in Russia, exposure to **1000 microW/cm²** (SC6 Guideline for microwave radiation, which includes WiFi) is tolerated for only **15 minutes a day!** In Canada, children can be exposed **all day** and **every day** to this level.

The best guidelines in the world for pulsed microwave radiation come from the Czech Republic. WiFi is pulsed radiation, which is known to be more harmful than non-pulsed radiation. The Czech guidelines for pulsed microwave radiation allow exposure to **4 microW/cm² for a 6-hour day** (school day). This is **0.4% of the SC6** Guideline! The reason for the lower maximum is that the several countries with stricter guidelines (Czech Republic, Switzerland, China, Hungary, Poland, etc.) do not base their guidelines solely on **heating**; these countries base their guidelines on **biological effects** that include changes in calcium flux, changes in the permeability of the blood-brain barrier, and damage to DNA.

In 1999, Dr. Sheela Basrur, Medical Officer of Health for the City of Toronto, asked that federal guidelines be reduced to **1% of SC6 Guidelines** to protect people. If you truly want to be a world leader in this, you will ask that exposure in schools not exceed **0.1 microW/cm²**, which was the Salzburg recommendation that was overturned by industry pressure.

Parents in Collingwood are concerned about their children being exposed to WiFi because a number of students return from school complaining about ill health: **headaches, nausea, dizziness, difficulty concentrating, weakness, pressure in the head, and a racing or fluttering heart** (these are biological effects). These symptoms occur only in classrooms with WiFi. They do not occur in portables that do not have WiFi, and they do not occur in homes that do not have wireless technology.

The **heart palpitations** are perhaps the most concerning as several students have experienced **sudden cardiac arrest**; the incidence of this in the Collingwood region seems abnormally high for a small community in Canada. One student was encouraged to have exploratory heart surgery. Her parents kept her in a microwave-free environment and her symptoms disappeared. No surgery was required.

I conducted a study ([Havas et al. 2010. Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system, Eur. J. Oncol. Library Vol. 5: 273-300.](#)) showing that adults who are electrically sensitive react to this frequency (2.4 GHz) at levels **0.3% of SC6 Guidelines**. The reactions include heart irregularities, a rapid heart rate, up-regulation of the sympathetic nervous system, and down-regulation of the parasympathetic nervous system. These are biological effects and do not involve heating. What this means is that their body goes into a **fight-or-flight response** when they are exposed to very low levels of microwave radiation at the same frequency used for WiFi. Since children are more sensitive to stressors than adults, I would expect the same to occur among some students in schools at very low levels of microwave exposure.

In addition to the heart abnormalities, we have evidence of **damage to sperm** for those who use a laptop computer in WiFi mode. What WiFi exposure is doing to egg cells is not known. We have evidence of **DNA damage**—the same type of damage produced by ionizing radiation. By exposing children to microwave radiation, we may be adversely affecting their ability to reproduce and the genetics of future generations.

To alleviate parent concerns, the Superintendent of Education, Area 3 (Mr. John Dance) hired a consultant to measure microwave exposure in two schools: Mountainview Elementary School and Collingwood Collegiate Institute ([document attached](#)). In one school, levels **above SC6** were measured (**1342 microW/cm²**), and this was

downplayed because it was close to the computer. Yet this is where children sit and work . . . close to computers!

Fifty percent of the locations measured in these two schools exceeded the **0.3% of SC6 Guidelines** that affected adult hearts in our cardiac study. This is not comforting news for parents or teachers. Testing at one of the schools was after school hours and hence the levels are likely to underestimate real exposure.

Since it is possible to connect to the internet with **wires**, why is there such a push for **wireless** technology? Why is it that you are so willing and eager to expose children to this radiation? As a scientist who has studied this for the past 15 years, I would not want my grandchildren exposed at home or at school to microwave radiation. I would not risk harm to their little bodies for the convenience of wireless access. The risk is too great and the benefit too small.

In my own work, I use wired internet access at home and, whenever possible, I use wired internet access at Trent University, although wireless is available. So we are not limiting access to the internet if we use wired connections; with wired connections, we are simply flowing the radiation through wires rather than through the air and through the bodies that are in the area.

Another aspect that I see as morally reprehensible is that some of your **teachers** know they are electrically hypersensitive, which means they react adversely to microwave radiation and other electromagnetic frequencies. These teachers fear becoming ill and unable to work after WiFi is installed in their schools. These teachers are afraid to speak out for fear of losing their jobs. Their attempts to alert other teachers about the dangers have been thwarted by principals and others in authority. Their voices cannot be heard. I find this most disturbing. Is this the type of education we are providing to our students in Ontario? Do we not want our teachers to be role models and to teach their students to become engaged in the political process and to speak out about important issues? How can teachers do this if their jobs are at stake?

Why is it that **parents** are required to give permission with signed consent forms for student bus trips and photographs but are not consulted and asked for permission to expose their children to microwave radiation?

Why is it that you recognize that some students have life-threatening peanut allergies and you are willing to make schools nut-free, yet you are unwilling to make schools WiFi-free? Schools are **smoke-free** and **nut-free**; we need **microwave-free** schools as well.

We knew about the health effects of **asbestos** decades before Health Canada brought in more restrictive guidelines. The same is true for **cigarettes** and other carcinogens and toxicants in our environment. Are you so certain that Health Canada's guidelines are safe when other countries have much more restrictive guidelines and when scientific studies around the world are documenting **cancers**, **sperm abnormalities**, and various **health effects** among people exposed to microwave radiation?

Do you not realize that **industry** is providing misinformation as it did with the other pollutants mentioned above? Please read "*Doubt is their Product*" if you have any uncertainty that big business tries to prevent people knowing the truth about the harmful effects of their products. Billions of dollars are at stake, and the wireless industry is going

to do whatever it can to convince you that their product is safe. By the time the lawsuits are filed, they will have made enough money to pay for the damages.

There is no place for wireless internet in schools—especially since wired internet access is safer, faster, and more secure than wireless.

If you install wireless internet (WiFi), some students and teachers in your schools (an estimated 3% to 35% of the population) will become ill. Children and adults with undiagnosed, undetected heart problems may die. Are you willing to make a decision that risks the health and lives of those for whom you are responsible? Are you willing to leave the Board open to class action lawsuits? Is wireless technology so important to you that you are willing to risk public health and individual lives? You may decide to ignore this warning and side with Health Canada, but whatever happens you will not be able to hide behind Health Canada.

You are morally responsible for your decision. Children's lives and health are at stake. Please err on the side of caution.

Sincerely

Magda Havas,
Associate Professor

Attached:

[SCDSB-Feb-9-2011, WiFi.pdf](#)

Recommended viewing:

<http://www.youtube.com/watch?v=KN7VetsCR2I>

<http://www.youtube.com/watch?v=8Hi4NmQEsdg>