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Speaker of the House - Representative Tina Kotek

Senate President - Senator Peter Courtney

Chair House Committee on Education - Representative Margaret Doherty

Chair Senate Committee on Education - Senator Michael Dembrow

**Re: Scientists and Public Health Experts Request a Retraction of the Flawed Oregon Public Health Authority Review on Wireless Radiation and Children’s Health**

Dear Governor Brown, Oregon Health Authority and State Legislative Leadership,

As experts in public health and bioelectromagnetics having authored more than 1000 scientific publications, we are calling for a retraction of the Oregon Health Authority (OHA) 2020 report [“Wireless technology health risks report: Senate Bill 283”](#). The report would not pass peer review as it omitted animal and cellular studies and thus it does not provide a comprehensive or systematic review of the relevant literature. Accordingly, it does not comply with SB 283 (2019) which called for an investigation into the health effects of exposure to wireless radiofrequency radiation (RFR) to children, especially in the school setting, using independently funded peer reviewed scientific studies.

Three principal types of evidence are relevant to evaluating the impact of wireless radiation on children: 1) exposure modeling; 2) toxicological evaluations under controlled conditions; and 3) human studies. By excluding both modeling studies and experimental studies, the final OHA report represents a narrow and highly skewed review of the literature. Indeed, shortcomings discussed in the OHA 2020 report are precisely why observational human studies must be complemented with experimental studies that are more tightly controlled. Further, despite SB283’s stated intention to include “independently funded” studies, the final report includes and highlights industry-funded studies that have been rejected by the scientific community for their flawed methods.

The National Academy of Sciences, World Health Organization and U.S. public health agencies have a long tradition of relying on animal toxicology/carcinogenicity studies to identify hazardous agents and assess health risks in order to implement public health protective policies to prevent human harm.

Using methods that have been consistently approved and adopted by federal agencies for more than four decades, at the request of the Food and Drug Administration, the National Toxicology Program (NTP) carried out one of the largest, most comprehensive animal studies of the carcinogenicity of radiofrequency radiation. The [NTP study](#) found “clear evidence” of cancer as well as DNA damage in multiple organs. In addition, experimental studies from the distinguished Ramazzini Institute in Italy, found the same relatively rare tumor type using far lower radiation exposures, that are comparable to levels experienced from cell towers and base stations. Human epidemiology studies that examined long term exposures found associations with tumors that are of the same cell types found in the NTP and Ramazzini studies. Yale animal studies linked prenatal cellphone radiation exposure to impaired memory and hyperactivity in offspring, adding to a growing body of published research confirming adverse impacts to behavior and brain development in the developing young brain.

The OHA report omitted research characterizing the complex RFR exposures in the school setting. Children are exposed to radiofrequency radiation in school classrooms from multiple sources including cell phones, Wi-Fi routers, wireless laptops, tablets, virtual reality systems, wearable technology and nearby cell towers. OHA took no action to gather measurement data on actual RFR exposure in Oregon schools. Nor did they gather data on the number of students, teachers and staff that have asked for accommodations through the Americans with Disabilities Act (ADA) due to experiencing the debilitating symptoms from RFR exposure in schools. OHA omitted all research on this serious emerging public health issue called electromagnetic sensitivity (EMS) that is being reported in alarming numbers by students and staff in public schools across the U.S.

This report fails to acknowledge official actions by governments in [France](#), [South Korea](#), [Belgium](#), [Cyprus](#), the [European Parliament](#) and recommendations by the [American Academy of Pediatrics](#), [California Department of Public Health](#), [New Hampshire State 5G Commission](#) and [Maryland Commission on Children's Environmental Health](#) that have issued specific advice about why and how to reduce children’s exposures to wireless radiofrequency radiation.

As an example of the deficiencies in the report, the OHA Report “Methods” section describes the RFR emissions of interest in terms of frequencies. The report states inaccurately, “relevant RFR emissions [are] in the frequency range of cell phones and Wi-Fi, or approximately between 1.6 gigaHertz (GHz) and 30 GHz.” In contrast, the International Agency for Research on Cancer of

the World Health Organization examined frequencies of 30 kHz to 300 GHz in their investigation of carcinogenicity of RFR. Modern technologies use many frequencies, including RF radiation of 700 megaHertz (MHz) and lower. It is hard to have confidence in a study that misidentifies the basic parameter under investigation (albeit lower frequencies are noted among results). Indeed, the methods section did not even include the legislative directive to specifically consider “independently funded” studies, as an important criterion due to the [research](#) indicating sponsorship can impact results.

Contrary to what the OHA report asserts, OHA’s conclusions are not “in line” with other US federal agencies. The Centers for Disease Control, National Cancer Institute and National Institutes of Health do not make safety determinations regarding wireless radiation and contrary to what OHA seems to imply, these agencies have not undertaken any systematic review to make such a determination. In fact, the US does not have federally developed RFR safety standards. Despite the fact that wireless devices are now commonly used by babies, toddlers and teenagers, there has been no evaluation of the full body of scientific evidence by any US health or environmental agency for the last three decades.

The failure of Oregon Health Authority to utilize in their review the significant body of evidence showing harm to animals from wireless radiation exposure is contrary to public health principles and OHA’s own established protocols of using animal studies in many other reviews. By omitting key peer reviewed scientific evidence of adverse effects and downplaying the scientific studies showing impacts to memory and the brain, the OHA review does not comport with the Agency’s mission of protecting and promoting public health.

Best practice recommendations for systematic reviews on human health risks posed by environmental exposures were not implemented in the OHA review. OHA did not define the objectives of the evaluation nor identify the key questions to be addressed. If the objective of the review was to determine if radiofrequency was hazardous, then the scope of the review should have included multiple evidence streams. OHA presented no scientific explanation why the scope of the research review omitted animal studies and *in vitro* studies. OHA did not GRADE, rate or weigh the evidence. OHA did not conclude by classifying RFR into hazard identification conclusion categories according to key questions, but merely concluded with a summary statement.

A scientifically defensible investigation into the harmful effects of an environmental agent such as radiofrequency radiation (RFR) by a public health agency should have included the following:

- Adherence to good practice recommendations for systematic review methodology, including the publication and consultation of scope and review protocols.
- Inclusion of animal and *in-vitro* research on RFR, according to key questions under review.

- Reference to the classification of radiofrequency radiation as a Class 2B Carcinogen by the World Health Organization International Agency for Research on Cancer (IARC) in 2011 and the 2019 WHO advisory group recommendations that RFR associated with wireless technology be re-evaluated due to the recent animal and human studies finding associations with cancer.
- Research on children's unique vulnerability to RFR due to their relative size, proportionately higher brain exposures and developing brains.
- The inclusion of recent research such as studies associating RFR with [breast cancer](#) and [thyroid cancer](#).
- Research characterizing school exposures to the multitude of RFR sources students are exposed to in the classroom, including Wi-Fi routers, wireless devices, cell phones and cell towers.

Environmental Health Trust has documented these shortcomings as well as numerous additional issues and inaccuracies in an attached report also [online here](#).

The lack of transparency and rigor in the development of the scope, flawed methodology and analysis as well as the numerous omissions and inaccuracies cast serious doubt on the validity of the review. These faults and omissions, in our view, warrant the retraction of the report.

Respectfully,

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Dr. Don Maisch has been directly involved in standard setting specific to possible health effects from exposure to electromagnetic radiation (EMR) since 1993. He has served on the Standards Australia committee for telecommunications EMR exposure standards and was a consultative committee member for a revised Australian government powerline exposure standard (now concluded). In 2010 he received his PhD from the University of Wollongong, NSW, Australia for his thesis on conflict of interest and bias in telecommunications standard setting. He is a member of the Oceania Radiofrequency Scientific Advisory Association and the Australasian College of Nutritional and Environmental Medicine and has published a number of papers on the biological impacts of EMR exposure. His papers and thesis are available at

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