November 24, 2021

The Honorable Jessica Rosenworcel, Commissioner
Acting Chairwoman
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Dear Chairwoman Rosenworcel,

We write to you as scientists and public health experts deeply committed to protecting public health and the environment. As authors of numerous publications and reports in the field we urge that the FCC ensure a robust review of the latest science and expert recommendations in the FCC's upcoming reexamination of its Inquiry on human exposure limits for wireless radiation. The major scientific developments of the last two years must be included in the FCC review- especially in the new 5G environment where wireless is ubiquitous.

We request the FCC reopen Docket #13-84 "Reassessment of FCC Radiofrequency Exposure Limits and Policies" and Docket #03-137 'Proposed Changes to the Commission Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields" in order to refresh the record before issuing a final response to the recent August 13, 2021 judgment by the U.S. Court of Appeals for the District of Columbia Circuit, in Environmental Health Trust et al. v. the FCC.

Furthermore, as the FCC does not have expertise in interpreting scientific studies, it relies on input from federal health agencies and knowledgeable expert organizations to evaluate the scientific evidence and the adequacy of FCC limits. However the relevant US health and safety agencies have not reviewed the research on impacts to flora and fauna; long-term exposures from cell towers; children's unique vulnerability; and health effects such as damage to the brain and reproduction. The court noted that the "silence" of federal agencies such as the National Cancer Institute, the Environmental Protection Agency, the Centers for Disease Control and Prevention, and the National Institute for Occupational Safety and Health does not mean these agencies agree with the FCC's 1996 limits. In fact, none of these agencies has systematically reviewed the totality of science in their respective area of expertise both to develop safety standards and to offer an analysis of the adequacy of FCC's 1996 wireless exposure limits.

Accordingly, we recommend that the FCC record be reopened with ample time to allow for new substantive comments. U.S. safety limits for cell phones and cell towers must rest on sound science to ensure the public and wildlife are protected.

Importantly, we also recommend a full environmental impact review to evaluate 5G and the rapid proliferation of 4G wireless antennas in the USA. A three part review published in Reviews in Environmental Health found the scientific evidence showing adverse effects is sufficient to trigger new regulatory action to protect wildlife, yet the US does not have regulations that were ever designed to protect flora and fauna (1). Instead, the FCC is fast tracking small cell deployment and opening new

spectrum disregarding recent research which finds, for example, that the higher frequencies of 5G can result in higher absorption rates into the bodies of pollinators.

In addition, experts are warning that 5G will contribute to climate change and have documented the exponentially increasing energy demands of 5G networks, "smart" wireless devices, and other new communication technologies. As the FCC has projected hundreds of thousands of new wireless facilities, we recommend a full environmental assessment for the 5G rollout and 4G wireless network densification.

The scientific evidence has substantially increased over the last two years (2). In 2020 scientists of the National Institute of Environmental Health Sciences National Toxicology Program published their animal-study findings of "significant increases in DNA damage" in groups of mice and rats after just 14 to 19 weeks of exposure to cell phone radiation (3). A 2021 analysis published by the Environmental Working Group concluded FCC limits should be 200 to 400 times more protective than the whole-body exposure limit set by the FCC in 1996 (4). Unaware of the scientists calling for caution, school districts nationwide are deploying high-capacity Wi-Fi networks in school buildings, testing out 5G networks with students, and signing leases with companies to install cell towers on school property, relying on these outdated FCC limits. As the American Academy of Pediatrics and numerous other specialists have noted, children are uniquely vulnerable to wireless radiation (5).

Health risks should be assessed by experts with no conflicts of interest. The FCC should not rely on the International Commission on Non-Ionizing Radiation Protection (ICNIRP), a small 14 member privately constituted invite only Commission lacking in transparency whose self-appointed membership has conflicts of interest and industry ties (6). ICNIRP has rejected the NTP and Ramazzini Institute animal studies with unfounded criticisms (7). Further, ICNIRP has not shown any systematic review of the totality of the research such as impacts to the developing brain and damage to reproduction. It has never conducted a comprehensive evaluation of human health and environmental risks associated with RF radiation. Their exposure guidelines are based solely on protecting against heating effects, with no change of concept since 1998, two years after the FCC adopted human exposure guidelines in 1996.

Broadband internet provides the connectivity that enables Americans to do their jobs, to participate equally in school learning and health care, and to create a fairer playing field by eliminating the digital divide. The United States must bridge the digital divide with a "future-proof" broadband infrastructure with wired *rather than wireless* connections to and through homes, schools and businesses that is affordable, reliable, high-speed, and sustainable.

Wherever possible, we urge that the broadband system rely on wired connections, rather than wireless connections. Wired connections are safer, faster, more secure, more energy efficient, and more reliable. Wired connections are especially important for schools and other institutions where they will save money and reduce exposure to wireless radiation.

Our experts stand ready to provide more detailed information to you on this important issue, including elaborating on materials and assistance with evaluating the science and impacts on humans, climate, animals, and wilderness.

Sincerely,

Linda S. Birnbaum, PhD
Scientist Emeritus and Former Director
National Institute of Environmental Health Sciences and National Toxicology Program
Scholar in Residence, Duke University, Former President, Society of Toxicology
Adjunct Professor, Yale University and UNC, Chapel Hill, Visiting Professor, Queensland University

Ronald L Melnick, PhD
retired from 28 years at National Institutes of Health
former Director of Special Programs in the Environmental Toxicology Program at the National Institute of Environmental Health Sciences at NIH

Jerome A. Paulson, MD, FAAP
Professor Emeritus of Pediatrics and of Environmental & Occupational Health
George Washington University School of Medicine and Health Sciences and George Washington University Milken Institute School of Public Health

Devra Davis, PhD, MPH
Fellow, American College of Epidemiology
Associate Editor, Frontiers in Radiation and Health
President and Co-Founder, Environmental Health Trust

Ronald M. Powell, PhD
U.S. Government career scientist (Applied Physics)
Retired from the National Institute of Standards and Technology

David O. Carpenter, MD
Director, Institute for Health and the Environment
A Collaborating Center of the World Health Organization
University at Albany, New York

Anthony Miller, MD
Professor Emeritus of University of Toronto
Senior Advisor to Environmental Health Trust
Former Assistant Executive Director (Epidemiology), National Cancer Institute of Canada
Former Director, Epidemiology Unit, National Cancer Institute of Canada, Toronto
Former Director, M.Sc./PhD Programme in Epidemiology, Graduate Dept. of Community Health, University of Toronto
Former Chairman, Department of Preventive Medicine and Biostatistics, University of Toronto

Kent Chamberlin, PhD
Professor & Chair Emeritus
Department of Electrical & Computer Engineering
University of New Hampshire
Commission Member on the New Hampshire Commission on 5G

Dr. Fiorella Belpoggi
Scientific Director, Ramazzini Institute
Bologna Italy

Livio Giuliani, PhD
European Cancer Research Institute
International Commission for Electromagnetic Safety

Morando Soffritti, MD
Honorary President and Former Scientific Director of Ramazzini Institute
Bologna, Italy

Rodolfo E. Touzet, PhD
Latinamerican Federation for Radiological Protection (past-president)
National Cancer Institute - Advisory Board Member
International Radiological Protection Association- Exec. Committee Elected member

Theodora Scarato, MSW
Executive Director, Environmental Health Trust

Colin L. Soskolne, PhD
Professor Emeritus, University of Alberta, Canada
Emeritus Fellow, American College of Epidemiology
Emeritus Fellow, Collegium Ramazzini
Recipient of the 2021 RESEARCH INTEGRITY AWARD of the
International Society for Environmental Epidemiology

Paul Héroux, PhD
Professor of Toxicology and Health Effects of Electromagnetism
McGill University Medicine
Department of Surgery, McGill University Health Center
InVitroPlus Laboratory

Paul Ben-Ishai, PhD
Department of Physics, Ariel University, Israel
Advisor to Environmental Health Trust

Meg Sears PhD
Sr. Clinical Research Associate, Ottawa Hospital Research Institute, Canada
Chairperson, Prevent Cancer Now

Claudio Fernández Rodríguez
Associate Professor, Federal Institute of Technology of Rio Grande do Sul, IFRS, Brazil

Alvaro Augusto de Salles, PhD
Professor and Chair, Federal University of Rio Grande do Sul, P. Alegre, Brazil

Igor Belyaev, PhD, DrSc
Associate Professor, Head of Department of Radiobiology
Cancer Research Institute, Biomedical Research Center, Slovak Republic

Marc Arazi MD
President Phonegate Alert NGO

Frank Clegg
CEO, Canadians For Safe Technology
Former President of Microsoft Canada

John Frank MD, CCFP, MSc, FRCPC, FCAHS, FFPH, FRSE, LLD,
Professorial Fellow (formerly Chair, Public Health Research and Policy,
and Director of Knowledge Exchange and Research Impact),
Usher Institute (of Population Health Sciences and Informatics), University of Edinburgh;
Professor Emeritus, Dalla Lana School of Public Health, University of Toronto;
Honorary Public Health Consultant, Public Health Scotland

David Gee
Centre for Pollution Research and Policy, Brunel University

Suleyman Dasdag, Full Professor of Biophysics,
Medical School of Istanbul Medeniyet University,
Istanbul, Turkey

Christos D. Georgiou, PhD
Professor Emeritus of Biochemistry
Biology Department, University of Patras, Greece
URL: http://www.biology.upatras.gr/wp-content/uploads/cv/CV_Ch.Georgiou_EN.pdf

Prof. Dominique Belpomme, MD, Director, European Cancer and Environment Research Institute (ECERI); Bruxelles, Belgium; President, Association for Research on Treatment against Cancer (ARTAC), Paris, France

Philippe Irigaray, PhD. Association for Research on Treatment against Cancer (ARTAC), Paris, France

Dr. Pierre Madl, EE MSc,PhD, Paris Lodron University of Salzburg (PLUS), Radiological Measurement Laboratory Salzburg (RMLS), Edge Institute (AT), Austria

Stella Canna Michaelidou, PhD
Expert on the Impact of Toxic Factors on Children's Health
President of the National Committee on Environment and Children's Health, Cyprus

Adejoke Olukayode Obajuluwa PhD
Senior Lecturer & Coordinator, Biotechnology Programme
Specialization: Molecular Toxicology and Neuroscience
Afe Babalola University, Ado Ekiti, Nigeria.

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