I, Alfonso Balmori, declare:

1. I am a wildlife biologist in Valladolid, Spain.

2. White storks (*Ciconia ciconia*) are a common urban bird in many Spanish cities, inhabiting buildings and church steeples alongside sparrows and pigeons. Selecting 60 rooftop nests scattered throughout Vallodolid—30 that were within 200 meters of one or more base stations, and 30 that were further than 300 meters from any base stations—I observed the storks with telescopes over a period of two years to determine their breeding success. By measuring the electric field at each location, I verified that the electric field, on average, was four times more intense at the closer locations. I also carried out 25 visits, to 20 nests located within 100m of a base station in order to observe the birds during all phases of breeding. The stork nests that were closer than 200 meters from the nearest cell tower fledged practacally the half number of baby storks as the nests that were further away. Of the 30 highly exposed nests, 12 fledged no chicks at all that died from unknown causes, while only one of the lesser exposed nests was barren. The behavior of the birds that nested within 100 meters of a base station was especially troubling. Stork couples fought over nest construction. Sticks feel to the ground while the couple tried to build the nest. Some nests were never completed and the storks remained passively in front of the antennas. My research on storks was published in 2005. Balmori, A, "Possible effects of electromagnetic fields from phone masts on a population of white stork (Ciconia ciconia), *Electromagnetic Biology and Medicine* 24: 109-119.

3. In light of declining populations of sparrows in Europe, I undertook to monitor the number of sparrows at thirty parks and park-like locations in Vallodolid. I visited each of these points on Sunday mornings, once a month for four years, counting birds and measuring

radiation. I found that not only were sparrows becoming generally much fewer over time, but that they were much more numerous in less irradiated areas—42 sparrows per hectare where the electric field was 0.1 volts per meter, down to only one or two sparrows per hectare where the electric field was over 3 volts per meter. I published these results in 2007. Balmori A and Hallberg Ø, "The Urban Decline of the House Sparrow (*Passer domesticus*): A Possible Link with Electromagnetic Radiation," *Electromagnetic Biology and Medicine* 26(2): 141-51.
The same year a similar study carried out in Flanders (Belgium) by other authors which obtained similar results was published in the same journal. J. Everaert, D. Bauwens, A possible effect of electromagnetic radiation from mobile phone base stations on the number of breeding House Sparrows (*Passer domesticus*), Electromagn. Biol. Med. 26 (2007) 63–72.

4. During a two-month period, on the fifth floor terrace of an apartment in Valladolid, I took care of two almost identical tanks of tadpoles of the common frog. One hundred forty meters away on the roof of an eight-story building were four cellular phone base stations. One of the two tanks of tadpoles was shielded from microwave radiation by a layer of thin fabric that was draped over it, which admitted air and light but kept out most radiation. Over a period of two months, the mortality rate of the tadpoles was 90 per cent in the unshield tank and only 4 per cent in the shielded tank. Almost all of the unshielded tadpoles swam in an uncoordinated fashion, showed little interest in food, and almost all died after six weeks. I published this study in 2010. Balmori A, "Mobile Phone Mast Effects on Common Frog (*Rana temporaria*) Tadpoles: The City Turned Into a Laboratory," *Electromagnetic Biology and Medicine* 29(1-2): 31-35.

5. From 2006 to 2015 I lead a research team that conducted a detailed field monitoring study in the cities of Bamberg and Hallstadt, Germany. During monitoring, observations and photographic recordings of unusual or unexplainable tree damage were taken. By systematic measurements of electromagnetic radiation, we compiled an electromagnetic map of the power flux density in Bamberg and Hallstadt. We selected 60 damaged trees, in addition to 30 randomly selected trees and 30 trees in low radiation areas. The measurements of all trees revealed significant differences between the damaged side facing a phone mast and the opposite side, as well as differences between the exposed side of damaged trees and both sides of all other groups of trees. Side differences in measured values of power flux density corresponded to side differences in damage. The 30 selected trees in low radiation areas (no line of sight to any phone mast and power flux density under 50 $\mu W/m^2$) showed no damage. Statistical analysis demonstrated that electromagnetic radiation from mobile phone masts is harmful for trees. Waldmann-Selsam C, Balmori-de la Puente A, Breunig H, Balmori A, "Radiofrequency radiation injures trees around mobile phone base stations," *Science of the Total Environment* 472: 554-569 (2016). I have been able to observe this evidence of radiation damage in trees near dozens of telephony antennas.

6. The increase in the density of base stations across the world has greatly increased electromagnetic pollution or "electrosmog," especially in urban centers. These devices produce microwave radiation at a variety of frequencies, including 700 MHz, 900 MHz, 1700 MHz, 1800 MHz, 1900 MHz, and 2100 MHz pulsed waves that interfere with the nervous systems of living beings. Prolonged exposure has also been shown to have negative effects on sperm motility

characteristics and reproductive capacity. There exist thousands of scientific studies that indicate danger for the health and humans and other living beings from this kind of microwave radiation.

7. 5G wireless technology will add much higher frequencies, in the GHz spectrum, and a much greater density of antennas is being planned, as many as one base station every one hundred meters for each wireless carrier. Not only in the United States, but in Spain and everywhere in the world, telecommunications companies are beginning to install these antennas on the streets and sidewalks of cities in front of people's homes, and anecdotal reports of damage to birds and illness in humans are beginning to emerge. Based on my own research and my familiarity with the literature, it is my opinion that such a high density of cellular base stations close to where people live, and throughout cities, will cause irreversible harm not only to the people who live in the cities but to the birds, wildlife and trees..

I declare that the foregoing is true and correct to the best of my knowledge.

