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Marin County Supervisors  
Room 329 Civic Center,  
3501 Civic Center Drive  
San Rafael, CA 94903

Re: Limiting the scope of Marin's financial risk for 5G litigation

Dear Supervisors -

This is the last of three letters, together sent as a gift with my kindly intent being to respectfully let your Board and County Counsel and our professional administrative policy makers know about emerging factors in EMF litigation risk, which new factors, if not skillfully addressed, will threaten the solvency of the County.

It was very decent of you to put on the Workshop and the turnout and messages spoken showed readily that there is massive constituent objection to 5G. Rather than complaining without suggested path, this letter offers a clearly defined strategy which is suggested as the safest course for minimizing litigation exposure. Maybe your people won't like it, I'm just pitching the best I can. In addition to the suggested overall strategy, actual listed defenses are respectfully listed as items A - G starting at page 9 of this letter.

I write to authenticate this advice; that the County's safest course for limited litigation exposure is, contrary to instinct, to immediately adopt an emergency moratorium on 5G permits and installations, including installations alleged as co-location.

Consider the situation of an aircraft in climb-out, if due to excessive nose-high attitude, it has entered into aerodynamic stall or has progressed beyond that to a spin. Flat spins result in high energy contact with terrain unless the spin is interrupted.

The pilot's instinct, not wanting to crash to earth, is to pull back on the yoke, to keep the nose in the instinctively desired direction, up hoping to get away from the approaching terrain. As you probably know, the actual procedure required to break out of an aerodynamic stall or resulting spin is to *go against instinct* and push the yoke *forward* to break the stall.

Based on clearly identifiable factors the current 5G risk posture of the County of Marin resembles that of an aircraft in high stall at the edge of spin, instinct says pull back on that yoke labeled 'settlement,' but the terrain rushing up at the County is an endless array of

ADA claims and other litigation if Marin *voluntarily* enters into a joint venture for 5G allowing telecom to merge microwave saturation machinery with publicly owned poles. The term 'merge' is used here in the Doctrine of Fixtures context. Please avoid that exposure.

The legal basis for Marin County's liability for Dangerous Condition of Public Property was presented in my letter to the Board dated February 4<sup>th</sup> and delivered to the offices of your Board on the morning of February 5<sup>th</sup>, which letter is incorporated herein as though more fully set forth. More explicitly, the County's risk comes from the math.

By the numbers.

After the Workshop and responsive to my letter, there was profuse Astroturfing with a higher skill ratio than poker at a Nevada casino. I avoided reading it, however a person whom I believe is known in her family as Starfleet Command was fascinated and read a few troll shots to me. One implied that I cared about my political chances, but that train left the station decades ago.

Another skill&troll, in a nicely focused hit piece, pitched that since in a legislative submission I'd claimed that 5G presents national security impairments, and also because in a 2017 letter against SB 649 I had once mentioned possible mass casualties, I must be an alarmist with claims to be laughed off. As it was read to me, an erudite person responded on the national security issue with reference to the back doors in Huawei equipment. As to the term 'mass casualties,' that's just arithmetic. Assume *arguendo* that three years from now 20,000,000 in California will be under constant saturation from 5G. Assume that only 3% of those people become symptomatic in the first half dozen years of operation; that's 600,000 people, and conveniently using six years in example that works out to a hundred thousand people a year. A phrase describing 'possible mass casualties' was just arithmetically descriptive of what happens when even a small percentage of our very large population is harmed. I don't know what that percentage will be, nobody can know the future for sure and the three percent figure is used only for illustration here, although I personally believe it to be justified, including through the findings of Dr. Olle Johansson of the Karolinska Institute, Stockholm. See the ÖRJAN HALLBERG AND GERD OBERFELD letter at *Electromagnetic Biology and Medicine*, **25: 189–191, 2006**. Please consider the situation in Marin, even using that same small percentage.

There are a quarter million people in Marin. The percentage of us whom in the future will be electrosensitive to the point of material recognizable attributable symptoms is unknown. For arithmetic illustration only, not as a stated epidemiological conclusion, using the estimate of only 3% leads us to expect 7,500 Marin residents to be affected by microwave exposure sickness the point of symptom in the near term.. And even if it's only one percent, that's 2500 of our people. The connection between this radiation and the symptoms of microwave exposure disease is well established. The NTP proof of causation of cancers in rats was not surprising to professionals in this field, set as it was in the context of hundreds of other studies showing EMF damage (see the UCSD School of Medicine letter incorporated below citing 360 such sources), with other studies previously showing brain cancer causation, see in particular the Norway study by Hardell, if memory serves that was in the

September 2013 edition of the International Journal of Oncology. Since this cause of their illnesses is well known, injured people will seek legal relief. If the injured are 'only' 2500, and 'only' one in five of those files an ADA claim or other litigation, that's still 500 cases against Marin or other local pole owners. Yes, these are hypothetical extensions, no we can't no exactly, and yes, although the percentage of people explaining their illness experiences at the Workshop was clearly higher than three percent of those attending, that was not a random sampling. Yet the resulting numbers of cases in this scenario are so large that even if this situation whittled down to the claims resulting from one half of one percent of our people being rendered ill, and again one in five filed ADA, that's still a big number, and for the professional planner raises serious concern for the very reason that we can't project exactly what is going to happen here, so that we face exposures the limit of which cannot be assured.

When our Supervisors and senior policy people examine whether the '500' cases example just used for illustration is reasonable, consider that the arithmetic example was based on an assumption of *only one percent* of our Marin population being sickened to the point of material attributable symptoms, and *only one in five* of those hurt people pursuing an ADA or other approach. Please also contemplate what happens if the percentage of our Marin population with such alleged traceable symptoms is three percent, *thus generating 7500 hurt people and 1500 filed cases by the same math*. If those are spread over the six years hypothetically used above, that's 250 cases per year. The work of Dr. Henry Lai and a now by 2019 an overwhelming body of scientific evidence show a hazard level that was not even considered remotely a serious risk when that Bill passed, Senator McCain voting against it in tiny minority.

More than 360 peer-reviewed sources on microwave injury are attached.

In response to the natural desire of the policy-defining reader to have proof of scientific concern, attached to this letter is the entire August 18, 2017, 25 page letter in opposition to SB 649 issued by Beatrice Alexandra Golomb, MD, PhD, Professor of Medicine, UC San Diego School of Medicine. From a medical professional of impeccable credential, this studied letter describes the medical consequences of mass installation of 5G, with annotations supporting her conclusion that **"If this bill passes, many people will suffer greatly, and needlessly, as a direct result."** Dr. Golomb's letter includes 360 citations to peer-reviewed studies showing microwave radiation medical consequences, with 21 pages out of 25 just for the citations.

I respectfully note that it solves for all variables in explaining a causation mechanism for mutagenic DNA change if, in physics terms, the damage is occurring through 'acoustic' means, which is not about music this time, and has everything to do with vibration.

Consider how a microwave works, as can be found in any encyclopedia, the next is from a World Book bought for our kids long ago: **"Microwave oven** is an appliance that heats food by penetrating it with short radio waves. These waves cause molecules in food to vibrate rapidly. Friction among the moving molecules creates heat, which cooks the food." This is, at a molecular level, shaken baby syndrome for all your cells.

The last industry lobbyist I spoke with on this issue in Sacramento was painfully unstudied in his underlying science dialogue, though he seemed like he'd be a terrific grandfather. I will do my best next to fairly state the core telecom industry point on tissue damage causation from cellular microwave: *“Non-ionizing radiation does not have sufficient power to displace an electron from its shell. Therefore it is impossible as a matter of well-understood physics for microwave radiation to cause any direct non-thermal **ionic** effect (meaning directly caused chemical change) in tissue.”*

To understand the industry argument it is necessary to remember valence from our high school chemistry classes. I hope scientists who read this, challenging or not, will feel that the industry point, ***which is the basis for the FCC safety standards***, has been fairly stated below:

- 1) The involved non-ionizing radiation does not have the ability to cause an electron to jump shell, so that:
- 2) Since an electron cannot be forced from shell, there is no change in the ratio between protons and electrons in the involved atoms, which ratio, in chemistry, is 'valence.'
- 3) If there is no change in valence ratio, there is no possibility of forced ionic recombination at an atomic level. Without a change in valence there can be no forced “ionic,” or direct chemical change.

I just found the following definition which gives us an adequate illustration: *“**Ionic bonding** is the complete transfer of valence electron(s) between atoms. It is a type of chemical **bond** that generates two oppositely charged **ions**. In **ionic bonds**, the [metal] loses electrons to become a positively charged cation, whereas the nonmetal accepts those electrons to become a negatively charged anion.”*

In saying that it is impossible for non-ionizing radiation to force ionic injury to tissue, the industry has been making a correct general statement of physical principle, and then incorrectly extrapolating the industry pitch that: *The only scientifically sensible explanation for damage to tissue, due to the non-ionizing character of the radiation, would be where prolonged close encounter caused microwave induced thermal damage to tissue.* Their whole scientific house of cards is built on the foundation of that Joker.

There exist at least two rationally deduced and also scientifically supported separate mechanisms through which, in fact, this non-ionizing radiation has sufficient power to tear apart living tissue. There is an annotated explanation of this in the Causation section of the July 19, 2017 letter submitted in opposition to SB 649, which can be found at [www.greenswan.org](http://www.greenswan.org) our embarrassingly out of date website, Green Swan is our very own ‘involuntary non-profit,’ but I believe that we’ll do well

once the new products based on the patents reach the market. I won't try to condense that 10 page analysis from July of 2017 here, but today, as in that July 19 letter, the vibratory nature of DNA strand breakage appears illustrated from the University of Maryland interferometer experiments of 1983. As I recall it, citations in the letter, the University of Maryland interferometer study showed that addition the of a 7.43 percent constituent of DNA into plain water (from DNA salts put into the resulting solution level of said 7.43 percent), caused a 24 fold (meaning ***24 times***) increase in Specific Absorption Rate (how much energy the fluid absorbed), ***which change in energy absorption was determined to be non-ionic, but rather 'acoustic.'*** Which means, to my understanding and as best I can phrase it: A transmitted vibration within a medium having the ability to do work at the recipient target within that same medium. In the interferometer study mentioned here, there was molecular change by DNA vibration (energy absorption in the DNA molecule, measured as comparison between the energy penetrating through the plain water compared to penetrating through the DNA solution). Call me sentimental if you want, but I still REALLY love the Ella Fitzgerald Memorex commercial from 1972, check it out.

As said in the July 19 letter, I believe that Dr. Trevor Marshall's work had shown the core point of acoustic DNA damage before my conclusion was published, all consistent with the authorities therein, excepting that to my embarrassment I misspelled Dr. Andrew Goldsworthy's name, I haven't tried to correct that in such an already public document, but I apologize. Derivative from this absorptive quality of DNA and synthetic DNA materials, the US Patent and Trademark Office recognized issued U.S. Non-Provisional Utility Patent 9,960,799 on May 1, 2018.

All these years the industry had been saying, 'the vibration won't hurt you, no harm until you cook.' However, Dr. Henry Lai's findings from the University of Washington School of Medicine proved that DNA strand is broken by exposure to cellular signal, established beyond rational scientific doubt. Dr. Lai's findings have never been disproved, and if industry could have, they would have. It is very worth your time to Internet search for: 'Dr. Henry Lai Seattle Magazine,' and to find the part in that article about where a disclosed industry memo pitched that the company involved needed to 'war game,' against Dr. Lai, as part of a concerted and focused effort to discredit him. Some of these people are nothing more than manipulative materialists who care for nothing but stature and wealth.

There are solid reasons for respecting the calcium ion analysis from Dr. Martin Pall, late of the University of Washington School of Medicine: Please see a 15 minute video of his 2015 presentation at The Commonwealth Club event organized by EMF safety expert Camilla Rees, <https://vimeo.com/132870272> . Dr. Pall is a credentialed scientist, I am not. I respectfully agree Dr. Pall's calcium ion conclusions, hardly surprising that tissue damage is multi-axial with DNA strand breakage and calcium ion cell damage both taking place. For compact access to Dr. Pall's scientific studies on the effects of EMF see: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3780531/> . For the

serious academic, see: [https://europaem.eu/attachments/article/131/2018-04\\_EU-EMF2018-5US.pdf](https://europaem.eu/attachments/article/131/2018-04_EU-EMF2018-5US.pdf) .

Please keep the scope of litigation narrow.

Marin County has talented lawyers at County Counsel, there are very many other employees of high talent in the building Litigating with telecom is narrow in scope and narrow in personnel necessary to address a small group of related cases which are no more challenging than any other set of a few coordinated important cases. If Marin is sued by telecom, that's only a few lawsuits.

Alternatively, in contractually allowing telecom permissively to use regional entity utility poles our county cannot comfortably rely on permit immunities and other traditional governmental defenses, because any such voluntarily compliant public entity has direct involvement ***as a participant in the tort***, due to joint venture, doctrine of fixtures et al, leaving pole owners permanently open to Claims for such WHO-defined injuries, cases unknowable number, without end.

Consolidation has taken place from the MDL and the transfer to the 9<sup>th</sup>. Marin's 5G litigation with Big Telecom (via the FCC puppets) ***is narrow in scope***, as it is now in the 9<sup>th</sup> Circuit. Should Big Telecom's really sue Marin over an emergency moratorium, they walk into the den of lions, and the scope of the suits involved, very likely consolidated, will be very narrow. Thus, the scope of litigation if Marin fights diligently only involves a handful of your skilled lawyers and/or limited outside counsel covered by the insurance pool.

I am personally aware of many people, including in Marin, each who has sufficient documentation of EMF sensitivity and negative medical consequence to morally and legally justify an ADA complaint, to mention just one possible course of action. That gentleman from Inverness tellingly testified about how microwave exposure causes potentially deadly variances in operation from titanium surgical instrument in his chest.

Our county faces a permanent multiplicity of long term litigation from microwave sickness claimants if Marin voluntarily cooperates with telecom on 5G. If our county will simply say no to 5G, the scope of litigation will remain narrow, at least for several years. Furthermore, if the county were ultimately ***forced*** by the federal government into 5G acceptance, such a forced local entity would have a stronger argument for federal reimbursement than an entity which just went along for the ride. Unfortunately the ultimate approach of such local 5G acceptance is that either the telecom's liability will be shifted to the local taxpayers, or in the instance of a reimbursement from the feds, telecom's liability exposure would be shifted to the federal government, in either instance a disastrous outcome.

Please consider the moral queasiness each Board member would forever after feel if in grasping for defenses against these avoidable lawsuits you were to resort to claiming, against the health of your constituents, that the 1996 Act also protects local governments as well.

## Cooling the Mark - Big Telecom's Hidden Persuaders

Electromagnetic hypersensitivity refers to health effects attributed to electromagnetic fields (EMF) exposure and has been formally named “idiopathic environmental intolerance attributed to electromagnetic fields” by the World Health Organization. I am personally aware of substantial settlement awards in EMF workplace injury situations in California and awards for electromagnetic disability involving high degrees of expert diagnosis. I remember a teacher who can no longer teach in a faraway District from here, ***which District “tested” the WIFI in the classroom only when the students and their Chromebooks were absent, and therefore the routers were in standby state.*** Similar forms of false ‘scientific’ testing have shown up in many counties, including in my opinion in Petaluma schools.

This isn't sunburn. ***Keep in mind that the NTP study specifically reported glioma cells.*** Some claims will result from life-ruination glioblastoma cancers. And note that the positive finding in the NTP study of cancer causation in the NTP study, rather than being a surprise to those who have long studied in this issue, was a result long widely expected a few examples out of hundreds follow: The Lund University finding of violation of the blood-brain barrier in rodents at very low wattage was back in 2003, the extremely remarkable book by former Motorola antenna scientist Robert C. Kane, published in 2000, ***Cellular Telephone Russian Roulette*** which appeared impossibly scarce for a while but is now available used, is the most pioneering book of all on this subject. The first letter on WIFI dangers to the LAUSD by Dr. Herbert of the Harvard Medical School was way back in 2013, referencing more than a thousand studies showing EMF damage, the Norway study led by Hardell definitively showing an increased rate of brain cancer in cell phone users was published in the International Journal of Oncology in September of 2013. In the introduction to his heroic book, the late (brain cancer) Robert C. Kane notes: ***“Never in human history has there been such a practice as we now encounter with the marketing and distribution of products hostile to the human biological system by an industry with foreknowledge of these effects.”*** The fact of microwave damage to biology was well established long before the NTP report.

How is it possible not to recognize such a risk? The March 29, 2018 investigative report in The Nation, ***How Big Wireless Convinced Us Cell Phones Are Safe*** is the finest investigative journalism that I've seen in my life. For those who first thought of Woodward, be sure to read Len Colodny's history of Watergate, titled Silent Coup. Conditioned memes and legends are the biggest of big businesses. Our government was released from statutory restraint years ago and can now lawfully engage in propaganda to its citizens, and whether the blood flows into pockets from the Left or the Right, it comes through the beating heart of America's giant corporations, and some are outright dumb. Consider PG&E for example.

Precision advertising has taught us to shuffle concerns about microwave cancer into the round bin with the Fringe sign on it. Our societal tardiness to recognize this hazard results in large part from advertising and its related appendage, industry sponsorship of

research. So part of this risk ignorance has been advertizing feedback so careful that Jacques Ellul, God rest his soul, would have appreciated the precision.

That's why CTIA ditched Dr. Carlo after he told them, 20 years ago, about the cancer risks he'd found. Please kindly read the 3/29/18 article from The Nation. Was it all in bad faith ? In 20-20 hindsight it is always easy to condemn past mistakes in the light of new insights, but the devotional team spirit cultivated within the wildly profitable field of telecom was often coupled with a sincere belief in the minds of competent engineers that the nature of the radiation involved meant it could not cause non-thermal damage to flesh. That issue has already been treated explicitly, and you already have exhaustive data from the contents of links supplied by many constituents besides me.

Based on the Workhop the constituent viewpoint is two hundred people in ratio to three out-of-town skills. Once the now available science information is understood by an interested person, there's no need for a sales pitch. I don't like being involved in this 5G issue, it is difficult and unhappy work which has presented personal security challenges but this is unavoidably necessary for me for moral grounds, study sometimes causes knowledge which inherently compels action by those concerned with their souls.

An understanding of group psychology is integral to serious modern corporate PR and political campaign practice and Big Telecom is glad to influence our views; best of all if the media-conditioned public has been sufficiently trained to treat polite dissenting views as 'fringe.' I'm old enough to have read Vance Packard when *The Hidden Persuaders* was new, of course there is Walter Lippman's bare statement that: "***The real environment is altogether too big, too complex, and too fleeting for direct acquaintance" between people and their environment. People construct a pseudo-environment that is a subjective, biased, and necessarily abridged mental image of the world (Lippmann, 1922: 4).***" August Bullock's *The Secret Sales Pitch* is the best modern work I've seen. The reality is that a true expert campaigner can cause new phrases and outlooks to be long remembered. For example, the late great Lyn Nofziger used to horribly pun 'better a Harry Lehmann than a bald priest.' Please concentrate on forgetting that pun. That is an example of the same sort of skill that telecom is paying for to form your views. NMFR.

Additional defenses for the County of Marin lawyers to contemplate for all EMF suits.

Without even scant lip service to Due Process, the FCC is waging a national Condemnation campaign to seize property rights belonging to cities and counties, local Districts, and other public entities and private entities. The term 'Condemnation' is used in the normal legal descriptive sense of a public entity taking private property the owner of that property being entitled under Due Process to access to the courts for replevin, with such just compensation being essential both under statutory law in all State jurisdictions and also on Constitutional grounds. I make no attempt here to exhaustively provide all of the many defenses which are readily familiar. What follows, A through E, are five less obvious defense approaches.



A- The defense of moral conduct.

I respectfully suggest an additional lawful basis for rejection of 5G which is not prohibited by the 1996 Act, ***namely that the installation of 5G given the totality of circumstances, is immoral, and Marin elects not to allow 5G installation on moral grounds.*** What are they going to say to that? Will telecom come argue that morality no longer matters? And we certainly do have room in our laws for morality in civil matters, it is called 'equity.' It is complete seriousness suggested that if sued, in defense of its moratorium, the County of Marin may respond, so long as there is an actual record of proceedings to same effect that: 'Based on the totality of the circumstances, the County of Marin has placed a moratorium on 5G on moral grounds.' I know that your linear thinkers will cringe, but I've been an M. Scott Peck fan for almost 30 years, and WTF ***are*** they going to say to that one? It is mostly self-admitted ego defense for me to say this, but before you decide to reject any idea just because of initial perceived unusual level of novelty, please examine U.S. Patents as next listed: 9,997,824, 9,960,799, 9,747,884, 8,890,697, 9,191,055, 9,379,757, 9,564,680, and 9,065,900. None of those have to do with 5G, all of them have to do with portable equipment and their Applications were filed before I'd even heard the term '5G.' As a result of my study in that work, I am morally required object to radiation saturation of Marin.

There appears no moral wiggle room on this one, it is immoral to irradiate people in order to sell them instant access to Bonanza reruns. It came to our attention during the long hard fight against SB 649 that discussions were ongoing between telecom and the cable industry. I wasn't a fly on the wall, my then and current comprehension of the situation is that telcom's goal to be covert all of the services we may now subscribe and enjoy to 5G wireless. Cuts out a lot of cable people, for one example. It is in the nature of invention that the greatest accomplishments come from unexpected quadrants.

B- The defense of Separation of Powers.

Telecom's own bought and paid for smurf choir now chants that neither cities, counties nor citizens can have access to the courts over being fried by their signals. Telecom relies here on the odious 1996 Telecommunications Reform Act, Section 704, which has been often often interpreted by industry to prohibit the courts from even entertaining any claims based on adverse health consequences. This is a massive violation of the basic concept of Separation of Powers.

The FCC claims that their pet Act is so powerful that now the Executive Branch can preclude the courts from even having jurisdiction over any tower-siting issues. Our system of courts has never been perfect and never will be perfect, but the courts are the safety net protecting us from the excesses of governance. It is extremely important that the issue of Separation of Powers, in this instance the severe overreach of the federal Executive Branch be fought in any litigation over 5G with telecom.

C- A prohibition of environmental claims does not preclude claims for direct physical harm to humans.

Another example in good faith litigation is whether any language in the 1996 Act was generally understood at the time and context of its drafting, actually prohibits cases based on direct physical harm to a human beings, as opposed to harm to the 'environment' in which we all reside.

Here in Marin many of us may take a more Alan Watts view of the environment, and see us all human life as part of an interconnected whole. But the 1996 Act was written in DC from the generally prevailing Western outlook of individual separateness, which some would argue is a cornerstone of the individuality to which we are all entitled. In that view, the 'environment' is the surroundings we live in, not something of which we humans are a part.

When the 1996 Act was passed, I respectfully submit that the generally prevailing Western approach of separateness, the all too often encountered 'us versus the environment in the name of wealth and progress,' was the common outlook. So the term 'environment' should not be interpreted as encompassing direct physical harm to humans, because in the Western view, which remains the generally prevailing view, we are not part of environment, but rather it's occupiers. The 1996 Act did not expressly prohibit claims for direct physical harm from microwave sources

D- The FCC is violating Due Process.

These FCC thumb puppets are saying to us all, 'skip the Due Process part' with the FCC asserting the position that even the Judicial Branch cannot stop this corporate-dictated irradiation of our population. Now is the time for all good people to come to the aid of their country. We have both statutory and Constitutional entitlements to Due Process when the government takes something of value from us. Every Due Process right that would normally attach in a Condemnation or Inverse Condemnation case, from our federal Constitution, from California's Constitution, and from both state and federal statute should be available to counties and cities and others who are about to have their property rights in these utility poles seized. This a gross over-reach in terms of Due Process as well as Separation of Powers.

E - Equal Protection of the Law.

This letter is written with our professional public administration people in mind and in recognition that these high ranking professionals guide policy too. It has been demonstrated that credible science shows that physical harm will result to some or all of us from excessive microwave absorption. Most of the people reading this are very educated. You can read the data and reach the necessarily deductive conclusions just as well as I can. This isn't a hobby or a game, this is serious. Our professional administrators and all their staffs have their own life quality at stake with regard to microwave saturation. For one example, it is well established, I think first from Dr. Argawal late of Cleveland Clinic, now at Mayo, that there

is a 50% kill rate in sperm from smart phone proximity (front pants pocket) , the last Israel study I saw said '47%'.

F - Is there really a 'gap in coverage?'

I have worked with scientists in this field since being introduced to Dr. Devra Davis in late 2009, and as a result of being pressed into objection to 5G by the data in a meeting I had tried to dodge in March of 2017. I had spent more than seven years by then in study of this area, study of the same sort used for the Chevron aviation gas class action (new engines for 1647 aircraft), the Mobil Oil AV-1 litigation (850 aircraft get overhauled, rebuilt or new engines), or any other serious major case. After, literal nausea when I shook hands in March of 2017, with grudging reluctance recognizing that I was morally forced by my knowledge to work on stopping SB 649 and related telecom efforts. I studied for and prepared at least 15 written presentations, eleven of them to state legislators or our Governor. I have for years been in regular communication with people who have used state-of-the-art meters to check for signal strength. Consistently it has been found that telecom-alleged gaps in coverage are usually phantoms. The experience is that, for personal communication as envisioned by the 1996 Act, claimed gaps in coverage are alleged but those allegations are very seldom found to be accurate. You can find data on this at <http://www.scientists4wiredtech.org> .

G- The allowance of federal preemption covers personal communication devices only, and does not cover what telecom is pitching to you as 5G (but which is actually densification of 4G with 5G upgrade intended).

The legislative intent and the actual wording of the 1996 Telecommunications Reform Act was to provide reliable coverage for personal communication devices, used for communication. Now the industry is telling you that it is necessary for us to install so-called 'small cell' antennas on every block. But Verizon's own CEO says this not necessary for 5G, see this video: <https://www.youtube.com/watch?v=IYAufhIgkpl&feature=youtu.be&t=31>. See also: <https://www.youtube.com/watch?v=jnyG2bliKCs&feature=youtu.be&t=30s> , in which a Verizon engineer shows that high density is not necessary for communication. And 5G is so toxic that phones are being designed to turn down signal if your fingers get near the antenna: Lenovo of China, owners of Motorola just released the following technology in their latest smartphone coming to the US so that: Device will shut down 5G radios upon detecting proximity and the device will shut down 5G radios at the smartphone surface where fingers would be covering some of 10 antennae in the device, to keep device's emissions under the allowed FCC's MPE levels:

<https://www.theverge.com/2019/2/16/18227951/motorola-5g-moto-mod-fcc-millimeter-wave-proximity-z3-pro>

Those who have followed this closely, particularly during the hearings in Sacramento on SB 649 conclude that a core motive for the anticipated '5G revolution' is the provision of entertainment through 5G, taking the place of cable. Because of the demonstrated strength of telecom's signals from the macro towers already in existence, see above convincing Verizon

videos, the only need which would demand the density is to supplant cable. ***That is not within the scope preemption as sought and stated in the 1996 Act.*** Therefore, Section 704 does not apply to 5G. Verizon's own PR shows provision of cable-level 5G entertainment: <https://www.verizonwireless.com/support/5g-home-faqs/?intcmp=vzwdom> . It is impossible for telecom to truthfully claim that the federal preemption extends to 5G, because the Act was written only for personal communication devices, not the provision of TV shows.

### Concluding statement.

Some groups will be more exposed to radiation than others, i.e., in public housing. It is reasonable to expect that the poor will bear a heavier burden. As the son of great dad who worked as a school custodian, I submit those who say they really care about assuring that the less advantaged are treated equally should fight against 5G from that perspective.

Due to density of living environment, those living in high density environments will be the most exposed. Imagine that you happen to live in a apartment with outside stairs at 8:30 p.m. , and just one person from each apartment in your 40 unit building is using the Internet via 5G; you now have the opportunity to be zapped by the subscriptions from your surrounding neighbors. Those who live on big lots and rural ranches will be less exposed.

After hearing so many coherent and sincere presentations at the Workshop, most of the long term trial lawyers who listened likely immediately recognized the potential for ADA claims, though a defense lawyer wouldn't have discussed that set of risks at a serious level until getting further data on the dimensions of exposure. As the Workshop went on we all witnessed many people of entire believability speak of the suffering they had witnessed and personally experienced from microwave exposure.

The microwave hazard to human health is well corroborated: See the collection of professional scientific data collection at the website of The Environmental Health Trust, founded by epidemiologist Dr. Devra Lee Davis, which is [www.ehtrust.org](http://www.ehtrust.org), see the collection of data, and please see the collection of scientific positions to be founder under "Quotes from Experts and other well organized scientific data, including from Dr. Magna Havas, to be found at <http://electromagnetichealth.org> , which I believe was founded by the activist and expert Camilla Rees. Dr. Havas saved a vital trove of Navy documents from destruction, I have seen a 1972 Navy document on EMF exposure with 400 sources listed.

My law specialty is in engineering cases which require serial striving for competency in the depositions of the Ph.D. experts. I am donating this study effort because it is the best I can do with the time and background I can donate, sent as a gift in the hope of treasuring life.

Cordially,



Harry V. Lehmann



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August 18, 2017

To whom it may concern,

**I urge in the strongest terms that you vigorously oppose California SB 649.**

**If this bill passes, many people will suffer greatly, and needlessly, as a direct result.**

**This sounds like hyperbole. It is not.**

My research group at UC San Diego alone has received hundreds of communications from people who have developed serious health problems from electromagnetic radiation, following introduction of new technologies. Others with whom I am in communication, have independently received hundreds of similar reports. Most likely these are a tip of an iceberg of tens or perhaps hundreds of thousands of affected person. As each new technology leading to further exposure to electromagnetic radiation is introduced – and particularly introduced in a fashion that prevents vulnerable individuals from avoiding it – a new group become sensitized to health effects. This is particularly true for pulsed signals in the radiowave and microwave portion of the spectrum, the type for which the proposed bill SB 640 will bypass local control.

**Mechanisms by which health effects are exerted** have been shown to include oxidative stress (the type of injury against which antioxidants protect, see optional section below), damage to mitochondria (the energy producing parts of cells), damage to cell membranes<sup>1,21</sup>, and via these mechanisms, an impaired “blood brain barrier”<sup>3-5</sup> (the blood brain barrier defends the brain against introduction of foreign substances and toxins; additionally, disruption can lead to brain edema<sup>6</sup>), constriction of blood vessels and impaired blood flow to the brain<sup>7</sup>, and triggering of autoimmune reactions<sup>8,9</sup>. Following a large exposure, that depresses antioxidant defenses, magnifying vulnerability to future exposures, some persons no longer tolerate many other forms and intensities of electromagnetic radiation that previously caused them no problem, and that currently cause others no problem. But this group deserves – nay needs -- the right to be able to avoid these exposures.

**Affected individuals not only experience “symptoms”** that “merely” cause them distress and suffering, when they are exposed – symptoms like headaches<sup>10,11</sup>, ringing ears<sup>10,11</sup> and chest pain<sup>10</sup> from impaired blood flow, heart rhythm abnormalities<sup>10,11</sup>, and inability to sleep<sup>10,11</sup>. These symptoms arise from physiological injury. Moreover, **many experience significant health problems that can include seizures<sup>11</sup>, heart failure, hearing loss<sup>12-14</sup> and severe cognitive impairment<sup>11,15</sup>**. The mechanisms involved are those also involved in development and progression of neurodegenerative conditions including Alzheimer’s disease<sup>16</sup>.



**Fully half who were employed when their problems developed lost their job because of the problem**, among participants of a survey we conducted. They reported that their condition had cost them up to 2 million dollars to date. Many had lost their homes. A number became homeless, and have swelled the ranks of so-called “EMF refugees”<sup>17-19</sup>. Among those affected, many were previously high functioning individuals – engineers, doctors, lawyers. The best and the brightest are among those whose lives – and ability to contribute to society – will be destroyed. High profile individuals with acknowledged electrohypersensitivity include, for instance, Gro Harlem Brundtland – the former 3-time Prime Minister of Norway and former Director General of the World Health Organization<sup>20</sup>; Matti Niemela, former Nokia Technology chief<sup>21</sup>; as well as the wife of Frank Clegg<sup>22</sup>, who formerly headed Microsoft Canada and is current head of Canadians for Safe Technology<sup>23</sup>.

**Each new roll-out of electromagnetic technology for which exposure is obligatory, swells the ranks of those who develop problems with electromagnetic fields (EMF).**- particularly following a significant exposure to pulsed radiowave-microwave radiation, and particularly when people have no ability to avoid it.

**Many state that they didn’t give credence to the problem (if they had heard of it at all) until they themselves fell prey to it.**

**This is not a psychologically driven condition.** Multiple objective physiological changes reflecting mechanisms of injury have been shown in persons with this condition<sup>24,25</sup>.

**The role for oxidative stress, that has been shown in innumerable studies (below), is affirmed by evidence of a link of this condition to genetic variants in antioxidant defenses**, that are less avid in defending against oxidative stress<sup>307</sup>. People cannot manipulate their genes, to produce such an outcome by suggestibility.

**An analysis by a University of Washington researcher showed that most studies funded by industry reported failure to show physiological effects. However, most studies without such industry bias affirmed effects.** This is redolent of findings shown in medicine<sup>26</sup>, regarding which the former editor in chief of the BMJ (the British Medical Journal), Richard Smith, noted, based on findings of a study, “This {result} suggests that, far from conflict of interest being unimportant in the objective and pure world of science where method and the quality of data is everything, it is the main factor determining the result of studies.”<sup>27</sup>. So where articles deny injury from nonionizing radiowave-microwave radiation, there is commonly a stake aligned with financial benefit from such denial.

**Those who are affected are in desperate need of protection by our elected officials.** They need creation of safe spaces and housing, and roadways to allow travel, not removal of any prospect of one; protection of local rights to make decisions - **not removal of any recourse or ability to avoid what injures them**. They are far more strongly in need of protections than a great many protected classes – their problems arose due to actions of others, against which they were given no control – *and can be reversed*, in most cases, if the assault on them is rolled back. Through no fault of their own, and in some cases against their will (e.g. before opt out was permitted with smart meters), they were subjected to an



exposure that has altered their lives as they knew them, and forced them – needlessly - to the margins of society.

**Let our focus be on safer, wired and well shielded technology – not more wireless.**

**This legislation, if passed, and the resulting unrestricted roll-out of this technology, will predictably and directly injure and disable a new group, and add depth of suffering to those already affected.**

**In other spheres we abridge freedoms to protect the vulnerable few.** We require that every schoolchild be vaccinated, supposedly to protect the vulnerable few who may not respond effectively to a vaccine. The need to protect the vulnerable group is deemed to be so great that it justifies the decision to abridge individual rights.

**In contrast, this bill seeks to abridge individual freedoms, and local rights, in the service of *harming* a vulnerable group, and creating a new one.**

(The common factor appears to be that in both cases, the direction is aligned with a powerful industry that influences political decisions.)

Luckily, no abridgment of individual rights and freedoms is required to protect, here.

**If any group can opt out** (such as, I understand, firefighters\*)<sup>28</sup>; **then every group deserves that equal right.** Others should not be second class citizens, subject to fewer protections.

It would go far to helping this cause if anyone complicit in promoting or passing the legislation (and then after that, *their* families) were required to be the first subjected, for a substantial test period, to the *greatest* amount of exposure that anyone *else* (and their families) may be subjected to, when new policies of this type are rolled out. It will still not do them equal damage; because they may not represent the vulnerabilities that others will have; but such a policy might help them to think twice. *That* is a bill I would strongly endorse.

**Most who are now affected – were not, until they were. This may become you – or your child or grandchild.** Moreover, if you have a child, or a grandchild, his sperm, or her eggs (all of which she will already have by the time she is a fetus in utero), will be affected by the oxidative stress damage created by the electromagnetic radiation, in a fashion that may affect your future generations irreparably.

It was noted above that, among survey completers, fully half of those who were employed at the time they developed electrosensitivity, lost employment *due to* this problem. (This may understate the scope of the tragedy, since this most-affected group may be least likely to be able to respond to an online survey.) **Many who previously had no problem navigating in the world are now restricted from access to basic services** like hospital care, post offices and libraries because of these problems. With each new introduction of technology that exposes many to yet a new nondiscretionary source of electromagnetic radiation, particularly (but not exclusively) that which emits pulsed radiation in the radiowave-microwave part of the spectrum, a new group of people are affected; and the suffering of those who are already affected increases greatly.



Please, defend the public and our future. Protect the rights of the individual and the locality, against a form of incursion that will lead to serious harm to some – and set a terrible precedent. **Vote no on California SB 649**, and urge that everyone else do the same.

Sincerely,

Beatrice Alexandra Golomb, MD, PhD  
Professor of Medicine  
UC San Diego School of Medicine

\*Comment on the fire fighter exemption: “The legislature granted an exemption from SB 649 to the firefighters who requested it for health reasons. Throughout California firefighters have long complained of often disabling symptoms from cell towers on their stations. Cities frequently rent out space on fire stations to add to city revenue. ...Symptoms experienced by the firefighters have included neurological impairment including severe headache, confusion, inability to focus, lethargy, inability to sleep, and inability to wake up for 911 emergency calls. Firefighters have reported getting lost on 911 calls in the same community they grew up in, and one veteran medic forgot where he was in the midst of basic CPR on a cardiac victim and couldn’t recall how to start the procedure over again...Prior to the installation of the tower on his station, this medic had not made a single mistake in 20 years. A pilot study (2004) of California firefighters showed brain abnormalities, cognitive impairment, delayed reaction time, and lack of impulse control in all 6 firefighters tested (<https://ecfsapi.fcc.gov/file/7022117660.pdf>). This study led to the overwhelming passage of Resolution 15 by the International Association of Firefighters in Boston in August 2004. Res. 15 called for further study and was amended to impose a moratorium on the placement of cell towers on fire stations throughout the US and Canada.”<sup>15 28</sup>  
Clearly, others who experience similar problems also deserve protections.

#### Optional – More on the Science

**There is a robust literature showing that electromagnetic radiation, including in nonionizing frequencies, and at levels<sup>29,30</sup> below those that are cause thermal effects (heating) – causes physiological effects, injury, and cell death** –not only in humans but many animals and plants<sup>3,7,31-49</sup>. Unsurprisingly, industry has sought – against the tide of evidence to the contrary - to maintain that radiation must be ionizing or heating to cause injury.

**Scores or hundreds of studies show that radiation, including specifically radiowave-microwave spectrum radiation, and including low-level exposure, can impair antioxidant defenses, increase “oxidative stress” (free radical injury) and damage mitochondria**, the energy producing parts of cells<sup>1, 2, 34, 50-6930, 70-104105-13646, 137-171</sup>. These effects occur with ionizing and nonionizing radiation, at thermal and subthermal levels. (Indeed, much or most of the damage by ionizing radiation, and radiation above the thermal limit, occurs by mechanisms also documented to occur without ionization, and below the thermal limit.) These





mechanisms cohere with the mechanisms documented to play a role in symptoms and health conditions that are reported in those who are electrosensitive – extending to seizures<sup>172-176</sup>, heart failure<sup>177-184</sup> and cognitive decline<sup>5, 32, 57, 108, 185-195</sup>.

**These mechanisms have known involvement in induction of brain cancer, metabolic diseases like obesity and diabetes, autism, autoimmune disease, and neurodegenerative conditions**, conditions that have exploded. In each case these have been linked, or presumptively linked, in some studies to electromagnetic radiation<sup>8, 9, 16, 34, 196-219</sup>.

**Such radiation also has effects on sperm**<sup>33, 100, 220-228</sup>; and the DNA of sperm<sup>229</sup> (consistent with recent news reports of marked recent declines in sperm counts and function)..

**Such radiation also has toxic effects in pregnancy**<sup>230</sup>, to the fetus and subsequent offspring<sup>231-235</sup> including at low levels<sup>236</sup>, and is tied to developmental problems in later life, including attention deficit and hyperactivity<sup>31, 235-241</sup>. It is critical to defend pregnant women (and eggs of girls who may at a later time become pregnant) from exposures with such toxicity.

**Electromagnetic radiation across much or most of the spectrum (not excluding visible light) has been shown to depress levels of melatonin**<sup>40, 72, 242-252</sup>, which is best known for its role in sleep (and indeed, impaired sleep is the most consistent symptom in affected individuals<sup>10, 11</sup>).

**Melatonin is in fact a critical antioxidant that defends the body against harm from many toxic exposures**<sup>253-266</sup> including electromagnetic radiation itself<sup>61, 66, 67, 82, 101, 107, 118, 121, 138, 144, 151, 204, 249, 267-284</sup> - reducing the oxidative stress that is implicated in cancer, metabolic diseases like obesity and diabetes, autism, autoimmune disease, bipolar disorder and neurodegenerative conditions, and that also plays a role in heart attack and stroke<sup>9, 285-329330-343</sup>.

**Radiation, and specifically radiation in the radiowave-microwave portion of the spectrum can also depress levels of other critical antioxidant systems** that also defend the body against chemical, radiation, and other sources of injury. These other antioxidant systems include the glutathione system, superoxide dismutase and catalase<sup>81, 102, 115, 116, 233, 344-358</sup> - which are also involved in defending against health problems.

**This suggests that depression of antioxidant defenses due to electromagnetic radiation may magnify risk of chemically induced health effects (and depression of antioxidant systems due to some chemicals may amplify risk of harm from electromagnetic radiation).** Indeed just such effects have been reported<sup>359, 360</sup>.



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