

**A TALE OF TWO CIRCUITS: CURBS ON LEGAL
REMEDIES FOR EXPOSURE TO POTENTIALLY
HARMFUL CELL PHONE RADIATION
EMISSIONS**

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Authorizing Statute Expressly Disclaims Any Such Implied Preemption.....37

I. INTRODUCTION

Worldwide use of mobile-cellular¹ technology has become ubiquitous over the past decade in all demographic groups, especially young children. The International Telecommunication Union (“ITU”) confirms the rapid expansion of cellular technology, reporting an increase in global cellular subscriptions from 15.5% of the population in 2001 to 96.2% in 2011.² In a recent release, the ITU reported a staggering 6.8 billion total cellular subscribers—a number fast approaching the total global population of 7.1 billion.³ In the United States alone, the number reaches more than 303 million.⁴

Accompanying this exponential growth in the use of mobile technology are mounting concerns about the possible adverse physical and medical effects of these devices, which expose users to radiofrequency (“RF”) radiation.⁵ Wireless handheld telephones send and receive electromagnetic energy, which is transmitted between the cell phone antenna and base stations⁶ in the area from which the phone is used to make or receive calls.⁷ The energy is not directional—that is, the

¹ I use the terms “mobile” and “cellular” interchangeably, to refer to all kinds of wireless hand held telephones, commonly known as “cell phones.”

² *Global ICT Developments*, INTERNATIONAL TELECOMMUNICATION UNION, available for download at <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> (last visited June 25, 2013).

³ *ICT Facts and Figures*, ITU TELECOMMUNICATION DEVELOPMENT BUREAU (Feb. 2013), <http://www.itu.int/ITU-D/ict/facts/material/ICTFactsFigures2013.pdf>.

⁴ Nicholas P. Panayotopoulos et al., *Litigation Alert: Cell Phones as Carcinogens*, DRI TODAY (May 17, 2012), <http://dritoday.org/feature.aspx?id=338>.

⁵ Seung-Kwon Myung et al., *Mobile Phone Use and Risk of Tumors: A Meta-Analysis*, 27 JOURNAL OF CLINICAL ONCOLOGY 5565, 5566 (2009), available at <http://jco.ascopubs.org/cgi/doi/10.1200/JCO.2008.21.6366>.

⁶ As explained in greater detail below, base stations are fixed structures that transmit wireless signals along a network of towers. See *infra* pp. 6–7.

⁷ *FAQs – Wireless Phones*, FEDERAL COMMUNICATIONS COMMISSION, <http://www.fcc.gov/encyclopedia/faqs-wireless-phones> (last visited Aug. 31, 2013).

signal is transmitted outwardly in all directions from the antenna.⁸ When a person makes a call from a cell phone, the device converts the sound of the caller's voice into radiofrequency energy, or radio waves.⁹ Those RF transmissions travel through the air until they reach a receiver at a nearby base station or cell site, which then forwards the signal through the wireless network of cell towers until it reaches a base station near the person receiving the call.¹⁰ That base station then sends out RF waves that are detected by the receiving cell phone's built-in antenna, and "the signals are changed back into the sound of a voice."¹¹

At certain levels, the energy generated by these RF emissions can be harmful to humans.¹² It is well established that, at high levels of exposure, RF radiation can cause biological damage by heating human tissue.¹³ Scientific studies have also found non-thermal biological effects at relatively low levels of exposure, including changes in the immune system, neurological effects, behavioral changes, alterations in brain tissue and breaks in strands of deoxyribonucleic acid—that is, our DNA.¹⁴ According to past comments by the Federal Communications Commission ("FCC"), which regulates these devices, "whether or not such effects might indicate a human health hazard is not presently known."¹⁵

Several prominent scientists compare the cell phone threat to the harm caused by tobacco and asbestos, which was discovered only after decades of use caused irremediable lung damage and untreatable cancers

⁸ *Cellular Phones*, UNITED STATES DEPARTMENT OF AGRICULTURE, <http://www.dm.usda.gov/ocpm/Security%20Guide/V2comint/Cellular.htm> (last visited Sept. 7, 2013).

⁹ *FAQs*, *supra* note 7.

¹⁰ *Id.*

¹¹ *Id.*

¹² See Robert F. Cleveland, Jr. & Jerry L. Ulcek, *Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields*, FCC OET Bulletin 56, 6 (4th ed. 1999), available at http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf; U.S. GENERAL ACCOUNTING OFFICE, GAO-01-545, REPORT TO CONGRESSIONAL REQUESTERS: TELECOMMUNICATIONS—RESEARCH AND REGULATORY EFFORTS ON MOBILE PHONE HEALTH ISSUES, at 7, 20 (2001), available at www.gao.gov/new.items/d01545.pdf [hereinafter GAO Report].

¹³ See Cleveland & Ulcek, *supra* note 12, at 6.

¹⁴ *Id.* at 8.

¹⁵ *Id.*; see also, e.g., Bruce Stutz, *Are Cell Phones Safe? The Verdict Is Still Out*, YALE ENV'T 360, Aug. 2, 2010, <http://e360.yale.edu/content/feature.msp?id=2300>; Cecilia Kang, *Cellphone Cancer Study Inconclusive; Researcher Urges More Study*, WASH. POST, (May 16, 2010), http://voices.washingtonpost.com/posttech/2010/05/cell_phone_cancer_study_produc.html.

in thousands of people.¹⁶ This view is consistent with recent studies warning of the dangers of cell phone use and the biological effects of RF radiation emissions. But the results of these studies are varied and no concrete scientific consensus has been achieved. While some studies suggest that no significant adverse health effects are associated with RF emissions, others posit “an increased risk for glioma, a malignant form of brain cancer,” and other maladies from cell phone use.¹⁷ The recent classification by the World Health Organization (“WHO”) and the International Agency for Research on Cancer (“IARC”) of RF emissions as “possibly carcinogenic to humans”¹⁸ has upped the ante significantly for plaintiff lawyers, state legislators, city officials and others who see a possible connection between cell phone use and harmful health effects, and suggests that mobile phone users may be exposed to serious health risks about which they are unaware.¹⁹

Although the evidence is not conclusive, many physicians and public health researchers have warned that cell phones may increase the risk of brain cancer and other conditions. The concern is particularly acute for children, whose developing brains are more susceptible to RF radiation exposure.²⁰ Nonetheless, and despite the serious health concerns and uncertain degree of risk, the cell phone industry has consistently advertised and marketed their cell phones as totally “safe.”²¹

Any credible scientific study conclusively linking cell phone use to health risks could fuel litigation with far-reaching implications. However, controversy over whether federal preemption of litigation

¹⁶ See, e.g., Vini G. Khurana et al., *There Is Currently Enough Evidence and Technology Available to Warrant Taking Immediate Steps to Reduce Exposure of Consumers to Cell-Phone-Related Electromagnetic Radiation*, 35 MED. PHYSICS 5203, 5203 (2008); Council of Europe, *The Potential Dangers of Electromagnetic Fields and Their Effect on the Environment*, at 1, Doc. 12608 (May 6, 2011), http://www.saferphonezone.com/site/wp-content/uploads/2011/05/Council_Europe_Report_The_potential_dangers_of_electromagnetic_fields_and_their_effect_on_the_environment_06_05_20116.pdf; *Tumors and Cell Phone Use: What the Science Says: Hearing Before the H. Domestic Policy S. Comm Oversight and Gov. Reform Comm.*, 110th Cong. 8 (2008) (statement of Ronald B. Herberman, M.D), available at http://cellphones.procon.org/sourcefiles/Herberman_Testimony.pdf [hereinafter Herberman].

¹⁷ See, e.g., Press Release, World Health Organization IARC, IARC Classifies Electromagnetic Fields as Possibly Carcinogenic to Humans (May 31, 2011), www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf [hereinafter WHO Press Release].

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ See Paul Scott, *Is Your Life on the Line*, MEN’S HEALTH (April 10, 2010), <http://www.menshealth.com/health/cellphone-risks-and-radiation>

²¹ See *infra* Part IV.

involving cell phone emissions makes such lawsuits “dead on arrival” has resulted in conflicting decisions—and therefore unpredictable outcomes. At least one federal Circuit Court has held that federal law preempts state law in consumer litigation over cell phone emissions,²² while an adjacent Court of Appeals has held just the opposite.²³ In between are state court decisions finding only partial preemption of consumer remedies and preservation of others.²⁴

This article first addresses the technology of cell phone communications—that is, how those transmissions work. Part II explores medical and other scientific studies that have found a causal link between exposure to RF emissions and biological injury, or that have exonerated those devices from any such causal connection with the data then available.²⁵ Part III discusses the wireless industry’s response to these studies. Part IV then traces the regulatory history of RF emissions by the FCC, the agency that has primary regulatory authority over these devices. In Part V, the article discusses the conflicting decisions of two federal Circuit Courts of Appeals over whether federal law preempts state law claims based on exposure to RF emissions. Finally, Part VI concludes by reflecting on the far-reaching, and likely unintended, consequences of decisions that have found broad federal preemption of state consumer law claims.

II. AN OVERVIEW OF CELLULAR TECHNOLOGY

A. Cell Sites

The rapid increase in cell phone use has been accompanied by the equally rapid construction of cell sites—structures that house the

²² See, e.g., *Farina v. Nokia, Inc.*, 625 F.3d 97, 133-34 (3rd Cir. 2010), *cert. denied*, 132 S. Ct. 365 (2011).

²³ See, e.g., *Pinney v. Nokia, Inc.*, 402 F.3d 430 (4th Cir.), *cert. denied*, 546 U.S. 998 (2005).

²⁴ See, e.g., *Murray v. Motorola, Inc.*, 982 A.2d 764 (D.C. 2009).

²⁵ Much of the survey of the medical and health studies is drawn largely from the thorough and excellent research conducted in Kartikeya Makker, *Cell Phones: Modern Man’s Nemesis?* 18 REPROD. MED. ONLINE 1 (2009) and Carol R. Goforth, *A Bad Call: Preemption of State and Local Authority to Regulate Wireless Communication Facilities on the Basis of Radiofrequency Emissions*, 44 N.Y.L. SCH. L. REV. 311, 345-346 (2001). Readers are referred to those authorities for a more detailed discussion of the medical and scientific literature. That and similar research is set forth in some detail in this article only for purposes of giving context to and aiding in understanding the discussion of the FCC’s regulatory activity and litigation which follows, not to persuade the reader on the “science” involved in the health debate surrounding cell phones, which is ongoing.

necessary electronic transmission equipment along with the towers on which those antennae are mounted. The FCC authorizes and regulates those towers to support the transfer of signals between cellular devices, creating a network of cellular access.²⁶ For each cell site, the level of permissible RF transmission depends on the number of radio channels (“transmitters”) that have been authorized, and the accompanying power of each.²⁷ FCC regulations permit an effective radiated power (“ERP”) of up to 500 watts (“W”) per channel, though a majority of urban and suburban cell sites operate at an ERP of no more than 100 W per channel.²⁸

The signal emitted from cell towers is transmitted in a wave, toward the horizon, which renders ground-level exposure to these emissions relatively insignificant.²⁹ Like any transmitter of RF energy, the intensity, measured as “power density,” of emissions also decreases sharply as one moves away from the antenna.³⁰ As a result, societal health risks associated with RF emissions from cell towers are reportedly minimal—the greatest risk is posed to individuals who work on these sites.³¹ According to FCC calculations of a “worst-case” scenario of health risks associated with cell towers, an individual would “essentially have to remain in the main transmitting beam [at the height of the antenna] and within a few feet of the antenna” to experience RF exposure that approaches FCC limits.³²

B. Dosimetry of RF Emissions and Thermal Heating

“Radiation dosimetry” is a subfield of radiation exposure that measures the radiation doses in tissue resulting from direct and indirect radiation, like those emitted by RF waves.³³ RF radiation at high enough levels causes thermal heating of human tissue, which poses serious risks to human health.³⁴ For example, RF radiation emitted from a microwave

²⁶ Cleveland & Ulcek, *supra* note 12, at 20–21.

²⁷ *See id.* A typical cellular base station employs a maximum of 21 channels for each antenna, providing an average of 63 transmitting channels per site. *Id.*

²⁸ *Id.*

²⁹ *Id.* at 20–21.

³⁰ *Id.*

³¹ Cleveland & Ulcek, *supra* note 12, at 21–22.

³² *Id.*

³³ *See* GEORGE CARLO & MARTIN SCHRAM, CELL PHONES: INVISIBLE HAZARDS IN THE WIRELESS AGE 21 (2002); IARC, *Non-Ionizing Radiation, Part 2: Radiofrequency Electromagnetic Fields*, 102 IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS 1, 68 (2013), available at <http://monographs.iarc.fr/ENG/Monographs/vol102/mono102.pdf> [hereinafter IARC, MONOGRAPHS].

³⁴ *See, e.g.,* Panayotopoulos et. al., *supra* note 4.

oven operating at 100 W or more propels RF waves at 2,450 megahertz (“MHz”)—powerful enough to thermally heat biological tissue.³⁵ But microwave ovens are considered safe by scientists and health experts because FDA regulations require that these appliances be housed in material strong enough to prevent leakage outside of the device.³⁶ Cellular devices in the United States operate largely on 850 and 1900 MHz bands, whereas most other countries operate on 900 and 1800 MHz frequencies—ranges still squarely in the middle of “microwave” territory.³⁷

Thermal heating of biological tissue also causes alterations in cellular physiology, which impairs basic cellular processes, including supplying nutrients to cells and cellular control functions.³⁸ The breakdown of these cellular functions exposes the body to many adverse biological effects, including genetic mutations and damage to the immune system.³⁹ When tissue is heated significantly, the consequences can be grave: cells die.⁴⁰ This level of severe damage to biological tissue can impair the function of entire organs, such as the kidneys and liver.⁴¹

Thermal heating of biological tissue also leads to breakdown and deterioration of DNA.⁴² Because mammals have sophisticated systems that repair DNA, this breakage does not inevitably lead to health complications.⁴³ If the rate of DNA breakage, however, “is greater than the ability of the body to repair the broken DNA, serious mutations and chromosomal anomalies can occur,” potentially leading to immune system deficiencies, birth defects and cancer.⁴⁴

RF radiation emission is regulated by measuring the specific absorption rate (“SAR”), an expression of the amount of energy that passes through and thus may be absorbed by a local area of human tissue.⁴⁵ SAR is expressed as the energy flow per unit of mass,⁴⁶ and may also be measured by the average amount of RF radiation emission absorbed by the human body as a whole.⁴⁷

³⁵ CARLO & SCHRAM, *supra* note 33, at 19.

³⁶ *Id.* at 20.

³⁷ Makker, *supra* note 25, at 149.

³⁸ GAO Report, *supra* note 12, at 7; CARLO & SCHRAM, *supra* note 33, at 19.

³⁹ CARLO & SCHRAM, *supra* note 33, at 19.

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.* at 19–20.

⁴³ *Id.* at 20.

⁴⁴ *Id.*

⁴⁵ CARLO & SCHRAM, *supra* note 33, at 20.

⁴⁶ For example, watts per kilogram or W/kg.

⁴⁷ Makker, *supra* note 25, at 149.

As of 1993, experts have not confirmed any harm associated with *thermal* effects of RF emissions at SAR levels below 40 W/kg.⁴⁸ The FCC has regulated RF emissions in cell phones by capping allowable SAR levels at 1.6 W/kg.⁴⁹ Mobile phones in the United States operate at a SAR ranging from .12 to 1.6 W/kg,⁵⁰ so the cellular industry and federal government therefore conclude that cell phones are “safe” because this SAR cap of 1.6 W/kg is considerably less than the threshold for *thermal* effects (40 W/kg).⁵¹ This rationale, however, fails to take into account research studies suggesting that even at the comparatively low RF levels, there may be adverse *non-thermal* health effects caused by RF emissions from cell phones.⁵²

III. A BRIEF SUMMARY OF THE SCIENTIFIC RESEARCH

The WHO classifies agents according to monographs published by the IARC, called *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*.⁵³ Established in 1965 and based in Lyon, France, the IARC is the cancer-research arm of the WHO that works to identify the causes of human cancer.⁵⁴

Potential cancer-causing agents reviewed by WHO are selected by ad hoc IARC advisory groups based on two primary criteria: (1) where there is evidence of human exposure and (2) where there is some evidence or suspicion of carcinogenicity.⁵⁵ When an agent has been

⁴⁸ CARLO & SCHRAM, *supra* note 33, at 21.

⁴⁹ *Specific Absorption Rate (SAR) for Cellular Phones*, FEDERAL COMMUNICATIONS COMMISSION, <http://www.fcc.gov/encyclopedia/specific-absorption-rate-sar-cellular-telephones> (last visited Aug. 31, 2013) [hereinafter *SAR for Cellular Phones*].

⁵⁰ Makker, *supra* note 25, at 211.

⁵¹ *SAR for Cellular Phones*, *supra* note 47; *FAQs*, *supra* note 7.

⁵² See Goforth, *supra* note 25, at 345–46 (citing C.K. Chou et al., *Long-Term, Low-Level Microwave Irradiation of Rats*, 13 *BIOELECTROMAGNETICS* 469 (1992)). The GAO, the federal watchdog agency, has questioned the use of an exposure limit based solely on the thermal effects of RF emissions that “is not designed to address the possibility of any non-heating related effects, such as cancer.” GAO Report, *supra* note 12, at 20–21. The GAO further questioned the reliability of testing procedures for RF emissions from cell phones, observing that test results “can vary substantially” because of human error, variations in the calibration of equipment, the “lack of standardized testing procedures” and other “important sources of variability.” *Id.* at 18, 23–25.

⁵³ See, e.g., IARC, *Agents Classified by the IARC Monographs, Volumes 1–108*, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (July 16, 2013), <http://monographs.iarc.fr/ENG/Classification/index.php> [hereinafter IARC, *Agents Classified*].

⁵⁴ *Introduction to IARC Monographs Volume 102*, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, at 1 (May 24–31, 2011), http://www.iarc.fr/en/media-centre/iarcnews/2011/Intr_Monog102.pdf,

⁵⁵ *Id.* at 2.

identified for further evaluation, the IARC surveys the openly available scientific literature relevant to an assessment of the agent's carcinogenicity.⁵⁶ The IARC then separately evaluates evidence of the agent related to incidents of cancer in humans and in experimental animals, designating the evidence as “sufficient,” “limited,” “inadequate” or “evidence suggesting lack of carcinogenicity” for both of these groups.⁵⁷ The body of medical and scientific evidence is considered as a whole, to reach an overall evaluation of the carcinogenicity of the agent to humans. A table of the carcinogenic agent classifications used by IARC is set forth below:⁵⁸

Group	Carcinogenicity	Total Agents Classified
1	Carcinogenic to humans	111
2A	Probably carcinogenic to humans	66
2B	Possibly carcinogenic to humans	285
3	Not classifiable as to its carcinogenicity to humans	505
4	Probably not carcinogenic to humans	1

In May 2011, the WHO and the IARC released a report classifying RF emissions as possibly carcinogenic to humans within Group 2B.⁵⁹ The finding was based on a confirmed increased risk for neuroma, a form of tumor that develops in human tissue, and glioma, a malignant type of brain cancer associated with use of cellular devices.⁶⁰

The implications of this determination are unclear but potentially sweeping. France, the country in which the IARC is headquartered, had previously imposed a ban on traditional cell phones in primary schools as a protective measure against mounting evidence suggesting that RF

⁵⁶ *Id.*

⁵⁷ *Id.* at 2–3.

⁵⁸ IARC, *Agents Classified*, *supra* note 53.

⁵⁹ WHO Press Release, *supra* note 17.

⁶⁰ *See, e.g.* IARC, *Agents Classified*, *supra* note 53; Kurt Straif, *Non-ionizing Radiation, Part II, Radiofrequency Electromagnetic Fields*, *IARC Monographs, Vol. 102*, <http://www.collegiumramazzini.org/download/STRAIF11.pdf>.

emissions are particularly harmful to children.⁶¹ The ban requires manufacturers to produce “stripped down” handsets that only have text and no voice capabilities, in an effort to protect children, whose less developed skulls permit greater penetration of RF radiation.⁶² But this classification by the WHO is just the latest in a decades-long effort to study the health effects of RF emissions.

A. History of Medical and Scientific Research on RF Emissions from Cell Phones, Cell Sites and Other Facilities

Since the early 1960s, researchers have published hundreds of peer reviewed studies that, individually and collectively, raise serious and credible questions regarding RF radiation from cell phones and the potential health threat it poses to cell phone users.⁶³ These concerns are particularly heightened when considering the deleterious effect of RF radiation upon the ever-increasing numbers of children who will use the devices over a more protracted period of time throughout their lifetime.⁶⁴ Despite the increasing frequency of studies suggesting a link between RF emission and numerous health hazards, the only consensus reached

⁶¹ *Au Revoir. Cell Phones Banned from French Elementary Schools*, WKYC CHANNEL 3, May 27, 2009, <http://www.wkyc.com/news/article/114546/0/Au-Revoir—Cell-phones-banned-from-French-elementary-schools>.

⁶² *Id.*

⁶³ *See, e.g., Goforth, supra* note 25, at 337 ((citing Symposium, *Biologic Effects and Health Hazards of Microwave Radiation, Proceedings of an International Symposium*, Warsaw, October 15–18, 1973, VII (1974), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1775882/pdf/amjph00794-0077c.pdf> [hereinafter Warsaw Symposium]) (noting that studies presented at the international symposium convened in 1973 in Warsaw and tasked with examining the health effects of exposure to microwave radiation “indicated substantial reason to be concerned about the health impact” and emphasized the need for further research on RF emissions’ biological effects).

⁶⁴ *See, e.g., id.* at 348 (citing A.A. Kolodynski & V.V. Kodynska, *Motor and Psychological Functions of School Children Living in the Area of Skrunda Radio Location Station in Latvia*, 180 SCI. TOTAL ENV’T 87, 87 (1996)) (describing how in 1996 Latvian researchers studying the effects of exposure to a radar station operating at frequencies of 154 to 162 MHz on children found “children living in front of the [station] to have less developed memory and attention, slower reaction times and decreased endurance of neuromuscular apparatus” than those not living near the facility); *cf. id.* (citing Ezra Berman et al., *Observations of Mouse Fetuses After Irradiation with 2.45 GHz Microwaves*, 35 HEALTH PHYSICS 791, 791 (1978)) (highlighting several studies in 1978 reporting fetal anomalies associated with RF exposure at half that of the legal standard); Makker, *supra* note 25, at 151 (citing R.P. Blackwell, *Standards for Microwave Radiation*, 282 NATURE 360 (1979)) (noting a 1979 study indicating that electromagnetic waves can affect fertility through thermal “microwave” effects).

within the scientific community is that there is not yet any conclusive answer.⁶⁵

In 2008, the National Academies of Science recognized the inconclusiveness of the existing research and suggested that further studies focus on such areas as the biophysical and biochemical or molecular mechanisms of RF radiation.⁶⁶ The next year, Korean researchers who compiled and reviewed 465 articles examining a potential connection between cell phone use and cancer found possible evidence of such risk in the medical literature.⁶⁷ In the interim, on July 21, 2008, Ronald B. Herberman, M.D., Director of the University of Pittsburgh Cancer Institute (“UPCI”), issued a warning to all physicians, researchers and staff at the cancer centers there to decrease their use of cell phones due to a possible connection between RF radiation and brain tumors.⁶⁸ Later that summer, Dr. Herberman presented testimony before a Congressional Subcommittee on “Tumors and Cell Phone Use: What the Science Says,”⁶⁹ explaining the reasoning behind the issuance of his advisory to his colleagues at UPCI, and noting that his “review of the literature suggest that most studies claiming that there is no link between cell phones and brain tumors are outdated, had methodological concerns, and did not include sufficient numbers of long-term cell phone users to find an effect”⁷⁰ Dr. Herberman advocated severe restrictions on cell phone use by children,⁷¹ and warned against the lessons of tobacco

⁶⁵ Compare Goforth, *supra* note 25, at 352 (citing Warsaw Symposium) (describing how studies presented in Warsaw found changes in the functions of the nervous and cardiovascular systems connected to prolonged, low intensity exposure to microwaves), with Int’l Comm’n on Non-Ionizing Radiation Prot., *Health Issues Related to the Use of Hand-Held Radiotelephones and Base Transmitters*, 70 HEALTH PHYSICS 587, 589 (1996), available at <http://www.icnirp.de/documents/radiotelephones.pdf> [hereinafter ICNIRP] (citing Philip E. Hamrick et al., *Thermal Denaturation of DNA Exposed to 2450 MHz CW Microwave Radiation*, 56 RADIATION RESEARCH 400 (1973)) (finding no such DNA damage as a result of exposure to RF radiation); compare Makker, *supra* note 25, at 149 (citing Kari Tahvanainen et al., *Cellular Phone Use does not Acutely Affect Blood Pressure or Heart Rate of Humans*, 25 BIOELECTROMAGNETICS 73 (2004)) (noting 2004 study reporting no significant change in blood pressure or heart rate due to cell phone exposure), with EMR Policy Inst. Comment, at 41, A National Broadband Policy for Our Future, GN Docket No. 09-51, FCC Rcd. (June 2009), available at http://www.emrpolicy.org/news/headlines/emrpi_comment_gn_09_51_fcc_09_31.pdf. [hereinafter EMR Policy Inst.] (finding heightened risk of developing malignant tumors in people exposed to RF radiation from mobile phone transmitter antennas).

⁶⁶ EMR Policy Inst., *supra* note 65, at 29.

⁶⁷ Myung et al., *supra* note 5, at 5565.

⁶⁸ See Herberman, *supra* note 16, at App. A.

⁶⁹ *Id.* at 9.

⁷⁰ *Id.* at 5–6.

⁷¹ *Id.* at 7

and lung cancer, where “debates over whether there was a true increase in lung cancer associated with smoking raged far longer than they should have, fomented by an active disinformation campaign which delayed for decades exposure of that causal link.”⁷²

In 2010, the International Journal of Epidemiology published the highly anticipated and widely reported “Interphone Study,” the largest study to date on the possible link between mobile phone use and brain tumors, conducted in 13 countries over a 10-year-period.⁷³ The study found no statistically significant increase in brain tumor risks associated with normal use of mobile phones, but found “suggestions of an increased risk of developing glioma—generally a malignant tumor type—on the side of the head where the cell phone is held” from more extensive exposure.⁷⁴ As for the possible adverse health effects of long term heavy use of cell phones, the researchers concluded that any such connection requires further investigation.⁷⁵ Critics of the study immediately attacked its conclusions, alleging design flaws and protocols, while also noting that the latency period for manifestation of cancers might be decades long and could not be captured in any human study.⁷⁶ Even before it was published, a collaborative group of scientists and medical researchers from more than a dozen countries issued a preemptive attack on the report. Specifically, the critics challenged the methodologies employed by the study’s researchers, noting that the study took four years to draft amid “internal squabbling” among its researchers about its own conclusions. Similarly problematic were the Interphone Study’s exclusion of children and young adults from the research pool, in addition to cancer victims who had died or were too ill to respond to researcher’s questions. Finally the critics charged that the study was flawed due to its partial funding by the wireless industry as well as the fact the there was a *decrease* in brain tumors among normal cell phone users compared to study participants who used corded phones—a finding that even the study’s own researchers declared not statistically

⁷² *Id.* at 8.

⁷³ Press Release, IARC, Interphone Study reports on Mobile Phone Use and Brain Cancer Risk (May 17, 2010), www.iarc.fr/en/media-centre/pr/2010/pdfs/pr200_E.pdf; see Andrew Schneider, *Is Your Cell Phone’s Radiation Level Safe? Don’t Call the FCC*, AOL NEWS (Mar. 14, 2011), <http://www.aolnews.com/2011/03/14/is-your-cell-phones-radiation-level-safe-dont-call-the-fcc/>.

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.*

“plausible.”⁷⁷ The Interphone Study Group itself recognized the study’s methodological limitations, noting that bias and errors prevented any firm conclusion with regards to causation.⁷⁸ Nevertheless, the FDA swiftly issued a “Consumer Update” to the public reporting on the results of the Interphone Study under the headline “No Evidence Linking Cell Phone Use to Risk of Brain Tumors.”⁷⁹ For its part, the wireless industry immediately cited the study as exonerating cell phones from any risk of malignant brain tumors⁸⁰ and included links to the FDA Consumer Update in package inserts for their phones.⁸¹

In 2011, researchers monitored the brain activity of 47 men and women during cell phone conversations, where cell phones were placed on both their left and right ears.⁸² While the researchers did not find altered activity throughout the entire brain, scans showed “significant changes in the orbitofrontal cortex and temporal pole, nearest to the ear, and the cell phone’s antennae, which are responsible for decision-making and auditory processing.”⁸³ However, the study concluded that “[t]his finding is of unknown clinical significance.”⁸⁴ Another 2011 study,

⁷⁷ *Cell Phones and Brain Tumors, 15 Reasons for Concern: Science, Spin and the Truth Behind Interphone*, EUROPEAN COMMISSION COMMUNICATION ON THE PRECAUTIONARY PRINCIPLE, 1, 5 (Feb. 2000), http://archive.radiationresearch.org/pdfs/reasons_a4.pdf; see also Ian Sample, *Mobile Phone Study Finds No Solid Link to Brain Tumors*, THE GUARDIAN (May 17, 2010), <http://www.theguardian.com/science/2010/may/17/mobile-phones-brain-cancer-study>; Janet Raloff, *Interphone Study Finds Hints of Brain Cancer in Heavy Cell-Phone Users*, SCIENCE NEWS (May 17, 2010), http://sciencenews.org/view/generic/id/59296/description/Interphone_study_finds_hints_of_brain_cancer_risk_in_heavy_cell-phone_users. As one Interphone researcher summed up the study: “If you look at the overall evidence, the study did not confirm or dismiss the possible association between cell phones and brain tumors. That’s the bottom line.” *Id.* The study itself urged more research. *Id.*

⁷⁸ Panayotopoulos, *supra* note 4.

⁷⁹ U.S. FOOD & DRUG ADMINISTRATION, NO EVIDENCE LINKING CELL PHONE USE TO RISK OF BRAIN TUMORS, at 1 (2010), <http://www.fda.gov/downloads/ForConsumers/ConsumerUpdates/UCM212306.pdf>. The GAO has criticized the FDA Report, *supra* note 12, at 5, 26–27.

⁸⁰ Shari Roan, *Embargo Break on Cellphone Brain Tumor Study Adds to Controversy*, LA TIMES BLOGS, (May 17, 2010, 10:45 AM), http://latimesblogs.latimes.com/booster_shots/2010/05/cell-phone-interphone-brain-tumors.html.

⁸¹ See, e.g., GAO Report, *supra* note 12, at 7, 26–27; *Consumer Information About Radio Frequency Emissions and Responsible Driving*, VERIZON WIRELESS (June 2010), <http://support.verizonwireless.com/support/pdf/collateral/rf0610.pdf> [hereinafter VERIZON WIRELESS]

⁸² Schneider, *supra* note 73.

⁸³ *Id.*

⁸⁴ *Id.*

conducted in Sweden, found an increase in gliomas as the latency period and degree of cell phone usage increased.⁸⁵

B. Unique Concerns About RF Exposure Among Children

As noted above, there is particular concern about RF exposure among children and teens, the fastest growing group of cell users in the country.⁸⁶ This growth is actively cultivated by the cell phone industry through advertising campaigns which extoll the indispensability of these mobile devices to their active life styles, and appealing to parents' desire to remain "in touch" with their children, particularly given the burdens of their own demanding schedules.⁸⁷ However, within the scientific community there is a growing concern that, children are most at risk to the potentially serious adverse health effects from the use of cell phones.

The current SAR standard for RF exposure from wireless devices is based on exposure testing of an adult male head, and only for *thermal* effects at that. No consideration is given to the smaller heads of either females or children.⁸⁸ This standard is flawed for several important reasons. First, the still developing nervous system and associated brain-wave activity in a child are more vulnerable to disturbances by RF radiation than are the brain waves of a mature adult.⁸⁹ Additionally, the increased mitotic activity in the cells of developing children makes them more susceptible to genetic damage from RF radiation.⁹⁰ Finally, a child's immune system's efficiency is also reduced by RF radiation.⁹¹ Children's immune systems are generally less strong than those of adults.⁹² Consequently, children will be less able to fend off any adverse health effects provoked by chronic exposure to RF radiation.⁹³

Underscoring the need for a new standard accommodating the unique risks posed to children is the fact that long before WHO listed cell phone emissions as "possibly carcinogenic to humans" in May 2011, several governments had already imposed severe restrictions on cell

⁸⁵ Panayotopoulous, *supra* note 4.

⁸⁶ *See supra* p. 1; Herberman, *supra* note 16, at 7.

⁸⁷ A search of the internet will reveals any number of "friends and family" plans offered by cell phone providers.

⁸⁸ *See supra* pp. 8–9 for the SAR standard.

⁸⁹ G.J. Hyland, *Environmental Impact of Electromog*, in ELECTROMAGNETIC ENVIRONMENTS AND HEALTH IN BUILDINGS 149, 158 (Derek Clements-Croome ed., 2003).

⁹⁰ *Id.*

⁹¹ *Id.* at 159.

⁹² *Id.*

⁹³ *Id.*

phone use by children.⁹⁴ Those restrictions are based on the fact that children: (1) have developing nervous systems which are likely to be more vulnerable to potentially hazardous agents than those of mature adults; (2) have smaller heads, thinner skulls, and higher tissue conductivity which may mean that children can absorb more energy from a particular phone than do adults; and (3) will inevitably use cell phones for a longer period of their lives and therefore will tend to accumulate greater risk to any detrimental health effects.⁹⁵ Similarly, researchers at the WHO stated in an article in the *Journal of Pediatrics* in August 2005 that, until more is known, pediatricians “could advise parents that their children’s RF exposure can be reduced by restricting the length of calls or by using hands-free devices to keep mobile phones away from the head and body.”⁹⁶

Numerous foreign governments and governmental agencies have taken decisive steps to curb cell phone use by children, including: United Kingdom;⁹⁷ Germany,⁹⁸ Denmark,⁹⁹ Thailand,¹⁰⁰ France,¹⁰¹ Russia,¹⁰² Italy,¹⁰³ Canada,¹⁰⁴ and Bangladesh.¹⁰⁵ In a statement on January 11, 2005, Sir William Stewart of the National Radiological Protection Board in the United Kingdom urged parents not to give cell phones to children under eight years old, and urged that those between eight and fourteen

⁹⁴ *Mobile Phone Health Risks: The Case for Action to Protect Children*, MOBILEWISE, 24 (Nov. 2011), http://www.mobilewise.org/wordpress/wp-content/uploads/MobileWise_mobile_phone_health_risks_NEW.pdf.

⁹⁵ *Id.* at 16–17.

⁹⁶ Leeka Kheifets et al., *The Sensitivity of Children to Electromagnetic Fields*, 116 J. OF PEDIATRICS 303, 311 (2005).

⁹⁷ Graeme Wearden, *Government to Respond to Stewart Enquiry*, ZDNET (Dec. 8, 2000), <http://www.zdnet.com/government-set-to-respond-to-stewart-enquiry-3002083057/>.

⁹⁸ Don Maisch, *Children and Mobile Phones: Is There a Health Risk? The Case for Extra Precautions*, 22 J. OF AUSTRALASIAN COLLEGE OF NUTRITIONAL AND ENVTL. MED. 3, 4 (2003); *German Academy of Pediatrics: Keep Kids Away from Mobiles*, 21 MICROWAVE NEWS 1, 5 (2001), available at http://microwavenews.com/sites/default/files/backissues/j-f01.ISSUE_.pdf.

⁹⁹ Maisch, *supra* note 98, at 4.

¹⁰⁰ *Id.* at 4.

¹⁰¹ *Id.* .

¹⁰² Nancy McVicar, *Getting a Cell Phone for Your Child? You May Want to Call up Research*, FORT LAUDERDALE SUN-SENTINEL (Oct. 2, 2005), http://articles.sun-sentinel.com/2005-10-02/news/0510010696_1_cell-phones-joe-farren-wireless-phones.

¹⁰³ *Id.*

¹⁰⁴ *Mobile Phone Health Risks: The Case for Action to Protect Children*, MOBILEWISE, 24 (Nov. 2011), http://www.mobilewise.org/wordpress/wp-content/uploads/MobileWise_mobile_phone_health_risks_NEW.pdf.

¹⁰⁵ Maisch, *supra* note 98, at 4.

should use them only when absolutely necessary.¹⁰⁶ Professor Stewart further stated that there was enough uncertainty about possible health risks from mobile phones to adopt a cautionary approach, particularly with children, and that new research being carried out across Europe led him to become “more concerned” about health risks than five years earlier.¹⁰⁷ Finally, Stewart called for more stringent disclosure requirements regarding how much radiation is absorbed in the body from different mobile phones.¹⁰⁸

Closer to home, Nicholas Johnson, a former member of the FCC, signed a petition and sent a letter to members of Congress in 2005 asking them to investigate the marketing of cell phones to children by the wireless industry.¹⁰⁹ Five years earlier, on April 27, 2000, Norbert Hankin, an environmental scientist at the EPA’s Office of Radiation and Indoor Air, wrote in an e-mail to Dr. George Carlo, who had conducted a study of cell phone safety for the wireless industry:

Recent studies involving short-term exposures have demonstrated that the subtle effects on brain functions can be produced by low-intensity pulse modulated [RF] radiation. Some research involving rodents has shown adverse effects on short-term and long-term memory. The concern is that if such effects may occur in young children, then even slight impairment of learning ability over years of education may negatively affect the quality of life that could be achieved by these individuals, when adults. The potential effect on learning of exposure from telecommunication devices used by children should be considered for study by the Radiation Protection Project.¹¹⁰

Studies have shown that a call of just two minutes can continue to affect the electrical activity in a child’s brain for up to an hour after use.¹¹¹ The same study showed that a child’s use of a cell phone results in radiation penetrating deeply into a child’s brain.¹¹² Disturbed brain

¹⁰⁶ David Adams, *Expert Spells It Out: Health Fears Mean Young Should Not Use Mobile Phones*, THE GUARDIAN (Jan. 12, 2005), <http://www.guardian.co.uk/society/2005/jan/12/health.medicineandhealth1>.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ Nancy McVicar, *Officials at Odds over the Long-Term Effects of Cell Phone Use*, SUN SENTINEL, 3 (Oct. 2, 2005), http://articles.sun-sentinel.com/2005-10-02/news/0510010696_1_cell-phones-joe-farren-wireless-phones.

¹¹⁰ CARLO & SCHRAM, *supra* note 33, at 219; *see infra* pp. 32–33.

¹¹¹ *What Cell Phones Can Do to Youngster’s Brain In 2 Minutes*, U.K. SUNDAY MIRROR (Apr. 1, 2004), <http://rense.com/general51/two.htm>.

¹¹² *Id.*

activity can lead to psychiatric or behavioral problems and may also cause learning difficulties in children.¹¹³

Another study showed that RF emissions could cause memory loss and epilepsy in young users.¹¹⁴ The study found that non-thermal radiation from the emissions changed the structure of human cells and that children were particularly vulnerable because their skulls were smaller and thinner, making it easier for radiation to penetrate.¹¹⁵ More recently, researchers at the Yale School of Medicine found that pregnant mice exposed to radiation from a cell phone affected brain development of the offspring, leading to hyperactivity, impaired memory and other behavioral problems after birth.¹¹⁶ The researchers' goal was to determine whether there was a possible correlation between cell phone use and the growth in attention deficit hyperactivity disorder ("ADHD") in children by examining whether mice exposed to RF radiation *in utero* exhibited similar behavior characteristics of children with ADHD.¹¹⁷ The researchers performed behavioral and electrophysiological studies and conducted a battery of tests that identify impairments in memory, hyperactivity, anxiety, and fear—conditions often associated with ADHD—and found such a relationship.¹¹⁸ The researchers warned, however, that "[further experiments are needed in humans and non-human primates to determine the risk of [RF] exposure during pregnancy."¹¹⁹

IV. THE WIRELESS INDUSTRY'S RESPONSE

Responding to growing concerns about the safety of their devices, some members of the wireless industry began to insert a copy of or link to the FDA's October 1999 "Consumer Update on Mobile Phones" ("FDA Update") into their product packaging.¹²⁰ The FDA Update began by informing consumers:

¹¹³ *Id.*

¹¹⁴ G.J. Hyland, *How Exposure to Base-Station Radiation Can Adversely Affect Humans*, COUNCIL ON WIRELESS TECH. IMPACTS (Dec. 2000), <http://www.wirelessimpacts.org/science/hyland1202.html>.

¹¹⁵ *Id.*

¹¹⁶ See Tamir S. Aldad et al., *Fetal Radiofrequency Radiation Exposure From 800–1900 MHz Rated Cellular Telephones Affects Neurodevelopment and Behavior in Mice*, 2 SCIENTIFIC REPORTS 1 (2012), <http://www.nature.com/srep/2012/120315/srep00312/pdf/srep00312.pdf>.

¹¹⁷ *Id.* at 1–2.

¹¹⁸ *Id.*

¹¹⁹ *Id.* at 1.

¹²⁰ See GAO Report, *supra* note 12, at 5, 26–27.

Mobile phones emit low levels of radio frequency energy (i.e., radio frequency radiation) in the microwave range while being used. They also emit very low levels of [RF] energy, considered non-significant, when in the stand-by mode. It is well known that high levels of RF can produce biological damage through heating effects (this is how your microwave oven is able to cook food).

However, it is not known whether, to what extent, or through what mechanism, lower levels of RF might cause adverse health effects as well. Although some research has been done to address these questions, no clear picture of the biological effects of this type of radiation has emerged to date. Thus, the available science does not allow us to conclude that mobile phones are absolutely safe, or that they are unsafe.¹²¹

Relying on the conflicting results of the numerous studies investigating the potential health hazards from cell-phone usage, the FDA Update went on to state, “there is not enough evidence to know for sure, either way.”¹²²

While acknowledging its refusal to take concrete action in regulating RF radiation from mobile devices, the FDA sought to assuage consumers by emphasizing that it “has urged the mobile phone industry to take a number of steps to ensure public safety.”¹²³ These steps included recommendations that the mobile industry:

- support needed research into possible biological effects of RF of the type emitted by mobile phones;
- design mobile phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and
- cooperate in providing mobile phone users with the best possible information on what is known about possible effects of mobile phone use on human health.¹²⁴

In addition to furnishing this FDA Update as a package insert or website reference, some members of the wireless industry also began including

¹²¹ U.S. FOOD & DRUG ADMINISTRATION, *The U.S. Food and Drug Administration’s Center for Devices and Radiological Health Consumer Update on Mobile Phones*, Oct. 20, 1999, <http://cryptome.org/fda102099.htm> (emphasis added).

¹²² *Id.* The Update went further in citing the alleged methodological flaws in “many” studies as support for its inconclusive stance on potential health hazards. *See id.*

¹²³ *Id.*

¹²⁴ *Id.*

headsets as part of the package of newly purchased mobile phones, and headsets had been marketed as a separate accessory for years.

In a similar vein, during a widely publicized press conference on January 25, 1993, Motorola, a major cellular manufacturer, proclaimed that “thousands of studies” had shown that cellular phones were “safe.”¹²⁵ On July 16, 1993, in furtherance of its campaign to assure the consumers of the “safety” of cell phones, the industry’s trade association, the Cellular Telecommunications Industry Association (“CTIA”), held a press conference to release a report entitled “Safety Update-Fast Facts: Portable Cell Phone Safety.”¹²⁶ The report stated unequivocally, in bold print; “Rest assured. Cellular telephones are safe!”¹²⁷ The report further stated that the emissions from cell phones fell within the safety standards of the FCC.¹²⁸

These widely disseminated industry pronouncements prompted the Deputy Director for Science at the Center for Devices and Radiological Health of the FDA to send a letter to the CTIA three days later. The letter directly challenged the statements made by the industry regarding the “safety” of cell phones.¹²⁹ The FDA’s letter to CTIA stated, in pertinent part:

I am writing to let you know that we were concerned about two important aspects of your press conference on July 16 concerning the safety of cellular phones, and to ask that you carefully consider the following comments when you make future statements to the press.

First, both the written press statements and your verbal comments during the conference seemed to display an unwarranted confidence that these products will be found to be absolutely safe. In fact, the unremittingly upbeat tone of the press packet strongly implies that there can be no hazard, leading the reader to wonder why any further research would be needed at all. (Some readers might also wonder how impartial the research can be when its stated goal is “a determination to reassure consumers,” and when the research sponsors predict in advance that “we

¹²⁵ Jeffrey Hoffman, *Motorola Defends Cellular Industry Over Cancer Charges*, ASSOCIATED PRESS (Jan. 25, 1993), <http://www.apnewsarchive.com/1993/Motorola-Defends-Cellular-Industry-over-Cancer-Charges/id-4a48a34f107d8c259ad81ea3a48e1ee4>.

¹²⁶ CARLO & SCHRAM, *supra* note 33, at 38.

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ *Id.* at 38–39,

expect the new research to reach the same conclusion, that the cellular phones are safe.”¹³⁰

The letter went on to declare:

We are even more concerned that your press statements did not accurately characterize the relationship between CTIA and the FDA . . . since it is not yet clear whether we will help to direct the research program, it is premature to state that we will credential the research.

To sum up . . . our role as a public health agency is to protect health and safety, not to “reassure consumers.” I think it is very important that the public understand where we stand in evaluating the possibility that cellular phones might pose a health risk¹³¹

On January 29, 1993, CTIA announced that cellular communications industry . . . will fund research to re-validate the findings of the existing studies, which have found that the radio waves from cellular phones are safe.”¹³² CTIA, with input and assistance from the Telecommunications Industry Association (“TIA”), hired Dr. George Carlo (“Carlo”), an epidemiologist, to chair what was dubbed the Surveillance Program to conduct the research through an entity called Wireless Technology Research (“WTR”),¹³³ However, CTIA and TIA let funding to WTR lapse, thereby terminating the project without any conclusions about any potential health risks from cell phone emissions.¹³⁴

Later that same year, the cell phone industry, again through its trade association CTIA, organized a committee to prepare a manual for public dissemination discussing “responsible” cell phone use.¹³⁵ The draft manual included language that acknowledged, or at least implied, that the use of cell phones could pose health risks.¹³⁶ The committee thereafter deleted the offending material, set forth in brackets below:

¹³⁰ *Id.* at 39.

¹³¹ *Id.* at 40.

¹³² CARLO & SCHRAM, *supra* note 33, at at 9. The primary motivation for initiating the research, according to CTIA, was so that “truth and good science [would] replace emotional videotape and unsupported allegations.” *Id.*

¹³³ *Id.* at 9–10.

¹³⁴ *Id.* at 138–39. The Federal GAO labeled the study “controversial” because of the lack of transparency about its work and finances, the direction of its research agenda, its disregard of input from the FDA, and other criticisms. *See* GAO Report, *supra* note 12, at 15–17.

¹³⁵ CARLO & SCHRAM, *supra* note 33, at 48.

¹³⁶ *Id.* at 49,

“Do not operate your transportable cellular telephone when holding the antenna, or when any person is within 4 inches (10 centimeters) of the antenna. [Otherwise you may impair call quality, may cause your phone to operate at a higher power level than is necessary, and may expose that person to RF energy in excess of the levels established by the updated ANSI Standard.

If you want to limit RF exposure even further, you may choose to control the duration of your calls or maintain a distances from the antenna of more than 4 inches (10 centimeters)].

For best call quality, keep the antenna free from obstructions and point it straight up.”¹³⁷

CTIA and the TIA elected not to make the disclosures and warnings proposed by their own committee.¹³⁸

While consistent and adamant about the “safety” of cells phones, members of the wireless industry obtained patents in 1998 on radiation shielding devices for mobile phones, citing increased concerns about exposure of the brain and other organs to emissions that “in the worst case it has been suggested could [lead] to a development of malignant tumor e.g. glioma from supportive cells.”¹³⁹ Separately, independent companies have capitalized on fears about the potentially harmful health effects of RF radiation from cell phones, marketing aftermarket “shields” which are advertised to block any harmful emissions.¹⁴⁰

Meanwhile, the FDA has been anything but consistent in its statements—both internally and to the public at large—about the possible health risks of RF emissions from cell phones. In the Spring of 1993, at the height of public concern over a possible link between cell phones use and brain cancer, biologists at the FDA concluded in an internal memorandum that the available data “strongly suggests” that microwave

¹³⁷ *Id.* at 49. Virtually all antennae on recent model cell phones are built internally in the device, so there is no ability to control its direction. *See FAQs, supra* note 7 (“[W]ireless phones are hand held phones with built-in antennas”).

¹³⁸ *Id.* at 51.

¹³⁹ U.S. Patent No. 5,787,340 (filed Feb. 15, 1994); *see also* U.S. Patent No. 5,550,552 (filed Feb. 15, 1994); U.S. Patent No. 5,338,896 (filed Sept. 3, 1993); Myranda Mowafi, *Plans for “Cancer Shields” in Mobile Phones*, DAILY MAIL, <http://www.dailymail.co.uk/news/article-52390/plans-cancers-shields-mobile-phones.html>; *see generally* Elissa Batista, *Patents Prove Cell Phone Dangers?* (Feb. 22, 2002), <http://cellphoneradiationprotection.com/reports11.html>.

¹⁴⁰ *See* Chris Woolston, *Do Cell Phone Shields Block Radiation?*, CHICAGO TRIBUNE (Aug. 3, 2009), <http://www.chicagotribune.com/health/chi-tc-health-skeptic-cell-donejun26,0,1956147.story>; *see also* THE EMF SAFETY SHOP, <http://www.lessemf.com> (last visited Sept. 6, 2013); PRESS SHIELD, <http://www.pressshield.com> (last visited Sept. 6, 2013); SAR Shield, <http://sarshield.com> (last visited Sept. 6, 2013).

emissions, apart from their thermal heating effects, can “accelerate the development of cancer.”¹⁴¹ According to researchers at the FDA’s Center for Devices and Radiological Health: “[o]f approximately eight chronic animal experiments known to us, five resulted in increased numbers of malignancies, accelerated progression of tumors, or both.”¹⁴² But the FDA’s public statements from 1993 through the remainder of the decade were consistent with its 1999 Update, and professed an inability to reach any firm conclusions about potential adverse health effects of RF radiation at levels emitted by cell phones given the inconclusive and often conflicting medical research and studies on the subject.¹⁴³

Currently, the FDA and FCC websites are even more bullish about the safety of cell phones. While also acknowledging that the “research is ongoing” and that “additional research is warranted to address gaps in knowledge, such as the effects of cell phone use over the long-term and on pediatric populations,” the FDA’s website tells the public that the “weight of scientific evidence does not show any association between exposure to radiofrequency from cell phones and adverse health outcomes.”¹⁴⁴ The website downplays the WHO’s May 11, 2011 classification of RF radiation as “possibly carcinogenic to humans” by noting that both coffee and “talc-based body powder” fall into that same classification Group 2B.¹⁴⁵ As noted previously, the FDA also misleadingly promotes the Interphone Study in a Consumer Update under the headline “No Evidence Linking Cell Phone Use to Risk of Brain Tumors” when the study itself explicitly disavows any such sweeping conclusion¹⁴⁶ and, to the contrary, expressly acknowledges a potentially higher risk of malignant brain cancer from heavy cell phone use.¹⁴⁷ The FDA also weighs in on children, stating unequivocally that

¹⁴¹ 1993 FDA Memo: Data “Strongly Suggest” Microwaves Can Promote Cancer, 23 MICROWAVE NEWS 1, 5 (2001), available at <http://microwavenews.com/sites/default/files/sites/default/files/backissues/j-f03issue.pdf> [hereinafter *1993 FDA Memo*].

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Radiation-Emitting Products, Current Research Results*, FEDERAL COMMUNICATIONS COMMISSION, <http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/Cellphones/ucm116335.htm> (last visited Sept. 7, 2013) [hereinafter *Radiation-Emitting Products*].

¹⁴⁵ *Id.* Lead, engine exhaust and chloroform also fall within Group 2B. AEGISGUARD RADIATION SHIELDS – THE NECESSARY ACCESSORY, http://www.goaegis.com/wireless_controversy.html, (last visited Sept. 7, 2013).

¹⁴⁶ See *supra* pp. 20–22.

¹⁴⁷ See U.S. FOOD AND DRUG ADMINISTRATION, NO EVIDENCE LINKING CELL PHONE USE TO RISK OF BRAIN TUMORS, at 1 (2010), <http://www.fda.gov/downloads/ForConsumers/ConsumerUpdates/UCM212306.pdf>.

“[t]he scientific evidence does not show a danger to any users of cell phones from RF exposure, including children and teenagers,” dismissing the December 2005 Stewart Report as “strictly precautionary” and “not based on scientific evidence that any health hazard exists.”¹⁴⁸ Such a ringing endorsement of the purported safety of mobile phone usage seems, at best, inconsistent with the FDA’s prior disavowal of any pre-sale or even primary regulatory authority.¹⁴⁹

For its part, the FCC’s website is equally dismissive, stating flat out that any cell phone that meets its SAR level of 1.6 W/kg is “safe,”¹⁵⁰ and repeating its prior statement that “[t]here is no scientific evidence that proves that wireless telephone usage can lead to cancer or other problems, including headaches, dizziness or memory loss.”¹⁵¹ However, the FCC similarly states that the federal government is monitoring the results of new studies “investigating claims of possible health effects related to the use of wireless telephones,” and notes that “the FDA is participating in an industry-funded research project to further investigate possible biological effects.”¹⁵² For additional information, the FCC directs readers to, among other sources, the industry trade association’s own website.¹⁵³ As before, cell phone manufacturers include links to the FCC and FDA websites—and sometimes quote verbatim these official statements—on their package inserts.¹⁵⁴

Despite the FDA and FCC’s tepid action regarding the potential health hazards of cell phone use, not all governmental watchdogs have been so bashful about raising public awareness on the issue. The Environmental Protection Agency (“EPA”), an agency familiar with the unsettled issues surrounding RF emissions and the guidelines adopted by the FCC, acknowledged publicly that “[f]ederal health and safety

¹⁴⁸ *Radiation-Emitting Products*, *supra* note 144.

¹⁴⁹ Compare *id.* where the agency’s website states that the FDA is a member of a federal “Interagency Working Group” which coordinates “different aspects of RF safety,” and that it “shares regulatory responsibilities for cell phones” with the FCC, with *supra* notes 123–124 and accompanying text.

¹⁵⁰ *SAR for Cellular Phones*, *supra* note 49; *FAQs*, *supra* note 7.

¹⁵¹ *FAQs*, *supra* note 7. The Federal GAO has expressed its concern to the FCC that this public statement is “misleading, because it implies that the health issues are settled” when they are not. See GAO Report, *supra* note 12, at 30.

¹⁵² *FAQs*, *supra* note 7.

¹⁵³ *SAR for Cellular Phones*, *supra* note 49.

¹⁵⁴ See, e.g., GAO Report, *supra* note 12, at 5, 26–30; VERIZON WIRELESS, *supra* note 81. The GAO is particularly critical of the manufacturers’ use of these federal agency statements, noting that the Consumer Update and other comments by the FDA are “not designed for mass distribution as an insert in mobile phone packaging.” GAO Report, *supra* note 12, at 27.

guidelines have not yet developed policies concerning possible risk from long-term, non-thermal exposures.”¹⁵⁵ The agency also stated that “[t]he FCC’s exposure guideline is considered protective of effects arising from a thermal mechanism but not from all possible mechanisms,” emphasizing that “the generalization by many that the guidelines protect human beings from harm by any or all mechanisms is not justified.”¹⁵⁶ Confirming that “[m]ost people’s greatest exposures result from the use of personal communications devices that expose the head,” the EPA concluded that “the current exposure guidelines used by the FCC are based on the effects resulting from whole-body heating, not exposure of and effect on critical organs including the brain and the eyes.”¹⁵⁷

V. THE FCC FORMALLY WEIGHS IN

In 1985, the FCC for the first time issued guidelines regarding human exposure to RF radiation from certain FCC-regulated facilities.¹⁵⁸ Significantly, the FCC action was taken under the National Environmental Policy Act of 1969 (“NEPA”),¹⁵⁹ rather than any grant of authority by Congress to the FCC based on that agency’s expertise or field of specialty.¹⁶⁰ Under NEPA, all federal agencies, including the FCC, are required to assess the environmental impact of any proposed “major” actions that might have a “significant” effect on the human environment.¹⁶¹

¹⁵⁵ Letter from Norbert Hankin, U.S. Environmental Protection Agency, to Janet Newton President, The EMR Network (July 16, 2002), *available at* http://www.emrpolicy.org/litigation/case_law/docs/noi_epa_response.pdf

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*; *see also* GAO Report, *supra* note 12, at 20–21.

¹⁵⁸ *See* Responsibility of the Fed. Commc’ns Comm’n to Consider Biological Effects of Radiofrequency Radiation When Authorizing the Use of Radiofrequency Devices. Potential Effects of A Reduction in the Allowable Level of Radiofrequency Radiation on FCC Authorized Commc’ns Servs. & Equip., 100 F.C.C.2d 543 (1985) (report and order) [hereinafter *Biological Effects of Radiofrequency Radiation Report and Order*]. The FCC has regulatory jurisdiction over wireless telephone service as part of its authority over radio transmissions. The FCC regulates the spectrum available for cell phone use and sets technical standards associated with cell phone communication. Because cell phones transmit radio signals, FCC authorization is required before a particular cell-phone model may be sold or used in the United States. 47 C.F.R. § 2.803 (2013).

¹⁵⁹ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370 (2013).

¹⁶⁰ *See Biological Effects of Radiofrequency Radiation Report and Order*, 100 F.C.C.2d at 543–44, 546.

¹⁶¹ 42 U.S.C. § 4332(C)(ii). NEPA requires all agencies to consider the environmental impact of their proposed actions and to take procedural steps, including preparation of environmental assessments (“EAs”) or environmental impact statements (“EISs”), before taking any “major” action that may “significantly affect[] the quality of

In its 1982 notice of proposed rulemaking, the FCC specifically acknowledged that it lacked primary jurisdiction to promulgate health and safety standards for RF radiation.¹⁶² Nevertheless, the FCC explained that NEPA required it to consider whether the activities at facilities and physical plants that it licenses significantly affected the environment.¹⁶³ For this reason, the FCC proposed amending its rules to address RF radiation at certain facilities.¹⁶⁴ The FCC did not seek to impose any substantive requirements on its regulated industries, nor could it have done so under the purely procedural parameters of NEPA.¹⁶⁵ The FCC also noted that state and local authorities already had adopted regulations regarding human exposure to RF radiation, but did not indicate any concern about possible conflict between those regulations and the FCC standards for transmission facilities.¹⁶⁶

In 1985, the FCC finalized its proposal by amending the regulations. The amendments specified certain actions that would be categorically excluded from NEPA's environmental analysis requirement because they lack significant effect.¹⁶⁷ The FCC stated that applications for certain permits would trigger NEPA requirements if the facilities seeking the permits are not in compliance with the otherwise voluntary,

the human environment.” 42 U.S.C. § 4332(2)(C). NEPA does not confer special authority on the FCC or on any other federal agency. NEPA merely imposes obligations on *all* federal agencies to consider the environmental impact of their proposed “major” actions. 42 U.S.C. § 4332(2). NEPA imposes only procedural obligations. *Dept. of Trans. v. Public Citizen*, 541 U.S. 752, 756 (2004). “NEPA itself does not mandate particular results, but simply prescribes the necessary process.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989). In *Robertson* the Court mandated that “[b]ecause NEPA imposes no substantive requirement that mitigation measures actually be taken, it should not be read to require agencies to obtain an assurance that third parties will implement particular measures.” *Id.* at 353 n.16.

¹⁶² Responsibility of the Fed. Comm’n Comm’n to Consider Biological Effects of Radiofrequency Radiation When Authorizing the Use of Radiofrequency Devices. Potential Effects of A Reduction in the Allowable Level of Radiofrequency Radiation on FCC Authorized Comm’n Servs. & Equip., 89 F.C.C.2d 214, 251 (1982) (notice of proposed rulemaking) [hereinafter *Biological Effects of Radiofrequency Radiation Notice*].

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 253.

¹⁶⁶ *Id.*

¹⁶⁷ See *Biological Effects of Radiofrequency Radiation Report and Order*, 100 F.C.C.2d 543 (1985). Established by NEPA, the Council on Environmental Quality (CEQ) coordinates federal environmental efforts and has issued NEPA regulations “to tell federal agencies what they must do to comply with the procedures and achieve the goals of the Act.” 40 C.F.R. § 1500.1 (2013). CEQ has instructed agencies that they may identify categories of actions that are excluded from NEPA because such actions typically would not trigger an EA or EIS requirement. *Id.* §§ 1507.3(b), 1508.4.

privately promulgated health and safety guidelines for RF radiation established by the American National Standards Institute (“ANSI”) in 1982.¹⁶⁸ As in its 1982 proposal, the FCC again explicitly acknowledged that it had “neither the expertise nor the authority to develop its own health and safety standards.”¹⁶⁹ The FCC’s 1985 standard was also severely limited in scope. Many low-power devices, including cell phones, were categorically excluded from the NEPA-based guidelines.¹⁷⁰ The FCC regulations implementing NEPA applied only to radio and television broadcast stations, earth stations and other “brick and mortar” facilities.¹⁷¹ All other FCC-licensed facilities and systems, including “cellular” facilities, were categorically excluded from FCC regulation of exposure to RF radiation.¹⁷²

In 1992, ANSI adopted new guidelines for permissible RF radiation exposure that applied to additional categories, including cell phones.¹⁷³ The FCC then proposed updating its NEPA regulations to reflect ANSI’s new findings.¹⁷⁴ Because the 1992 ANSI guidelines addressed cell phones, the FCC’s proposal suggested incorporating cell phones within its regulatory prerogative.¹⁷⁵

While the FCC rulemaking was underway, Congress enacted the Telecommunications Act of 1996 (“TCA”),¹⁷⁶ which amended the Federal Communications Act of 1934 (“FCA”). The TCA did not authorize the FCC to issue substantive health or safety regulations addressing RF emissions, but nevertheless directed the FCC to complete the NEPA rulemaking within 180 days.¹⁷⁷ Section 704(a) gave preemptive effect to the RF emission regulations that the FCC was directed to prescribe under Section 704(b), but only to the extent explicitly stated in 47 U.S.C. § 332(c)(7)(B)(iv) governing wireless

¹⁶⁸ *Biological Effects of Radiofrequency Radiation Report and Order*, 100 F.C.C.2d at 543–44.

¹⁶⁹ *Id.* at 560.

¹⁷⁰ *Id.* at 563.

¹⁷¹ *Id.* at 561–63, 567.

¹⁷² *Id.* at 559, 563; see Responsibility of the Fed. Commc’ns Comm’n to Consider Biological Effects of Radiofrequency Radiation When Authorizing the Use of Radiofrequency Devices. Potential Effects of A Reduction in the Allowable Level of Radiofrequency Radiation on FCC Authorized Commc’ns Servs. & Equip., 2 F.C.C. Rcd. 2064, 2065–66 (1987) (second report and order).

¹⁷³ See Guidelines for Evaluating the Environmental “Effects” of Radiofrequency Radiation, 8 F.C.C. Rcd. 2849, 2850 (1993) (notice of proposed rulemaking).

¹⁷⁴ *Id.* at 2851.

¹⁷⁵ *Id.*

¹⁷⁶ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996).

¹⁷⁷ *Id.* § 704(b).

service “facilities.”¹⁷⁸ Prior to the passage of the TCA, many state and local authorities had adopted ordinances that restricted the number and location of wireless stations and transmission lines due to concerns over RF radiation emissions. The FCC was powerless to interfere with this local action, and nothing in either NEPA itself or the FCC’s NEPA-based RF radiation regulations gave the agency any preemptive authority over those facilities and transmission lines. The TCA changed that and gave the FCC the specific authority it needed to preempt state and local law that conflicted with its own RF radiation regulations governing the size and location of those facilities.¹⁷⁹ But the FCA contained two additional provisions that severely restricted the extent to which Congress allowed FCC regulation of RF radiation to be given preemptive effect. Even before the TCA, the FCA contained a “savings” provision that remained in effect and states: “Nothing in this chapter [] shall in any way abridge or alter the remedies now existing at common law or by statute, but the provisions of this chapter are in addition to such remedies.”¹⁸⁰ The third explicit TCA mandate unambiguously rejected any “implied preemption” of state or local law. More particularly, Section 601(c)(1) of the TCA expressly states, under the heading “EFFECT ON OTHER LAWS”:

(c) FEDERAL, STATE, AND LOCAL LAW—

(1)*No Implied Effect*—This Act and the amendments made by this Act shall not be construed to modify, impair or supercede Federal, State or local law unless expressly so provided in such Act or amendments.¹⁸¹

The plain meaning of this statutory language requires no interpretation., although any doubt as to Congress’s intent is easily eliminated by consulting the legislative history of Section 601(c)(1): “The conference agreement adopts the House provision stating that the bill *does not have any effect* on any Federal, State or local law unless the bill *expressly so provides*. This provision *prevents* affected parties from asserting *that the bill impliedly preempts other laws*.”¹⁸² If “conflict” preemption bars

¹⁷⁸ *Id.* § 704(a).

¹⁷⁹ See Guidelines for Evaluating the Env’tl. Effects of Radiofrequency Radiation, 12 F.C.C. Rcd. 13,494, 13,542 (1997) (notice of proposed rulemaking).

¹⁸⁰ 47 U.S.C. § 414 (1934).

¹⁸¹ Telecommunications Act of 1996 § 601(c)(1) (codified at 47 U.S.C. § 152 (2006)); see also 47 U.S.C. § 414. In the original statute, “this chapter” was “this Act.” Communications Act of 1934, ch. 652, Pub. L. No. 416, 48 Stat. 1064 (1934) (repealed and amended 1996). The chapter includes all of the FCA and subsequent amendments.

¹⁸² H.R. REP. NO. 104-458, at 201 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 10 (emphasis added). Thus, Section 601(c)(1) of the TCA “specifically

application of a state law that would “stand[] as an obstacle to the accomplishment and execution of the full purpose and objectives of Congress,”¹⁸³ it is difficult to understand the application of that doctrine when Congress itself has explicitly stated that particular federal statutes should have no such “implied” preemptive effect.

After passage of the TCA, and in accordance with the TCA’s requirement that the FCC conclude its RF rulemaking within 180 days, the FCC adopted new standards, which it expressly referred to as “guidelines,” addressing RF radiation emitted by its regulated facilities and cell phones on August 1, 1996. Under the new regulations, the FCC may approve licensing and authorization applications from facilities that emit less than a specified amount of RF radiation without undertaking any environmental analysis under NEPA.¹⁸⁴ In addition to facilities, the 1996 regulations, for the first time, also covered “portable devices” such as cell phones.¹⁸⁵ However, as with its prior promulgations, the regulation of portable devices was attributed to the FCC’s “responsibilities under [NEPA] to evaluate the environmental significance of its actions,” rather than the delegation of any authority under the TCA or under any other telecommunications statute.¹⁸⁶ The FCC also adopted a regulation limiting preemption patterned on Section 332(c)(7)(B)(iv) and incorporated verbatim its restrictive preemptive language.¹⁸⁷

It bears repeating that the FCC issued its 1996 guidelines to satisfy its “responsibilities under [NEPA] to evaluate the environmental

provides that the amendments shall not impliedly preempt state or local law.” *City of Dallas v. FCC*, 165 F.3d 341, 346 (5th Cir. 1999). *Accord* *AT&T Commc’ns of the Pac. Nw., Inc. v. City of Eugene*, 35 P.3d 1029 (Or. 2001).

There are two types of “implied” preemption: field preemption, and conflict preemption. “Field” preemption applies when Congress’s “intent to pre-empt all state law in a particular area may be inferred [because] the scheme of federal regulation is sufficiently comprehensive” or “the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject.” *Colacicco v. Apotex, Inc.*, 521 F.3d 253, 261 (3d Cir. 2008) (quoting *Hillsboro County v. Automated Med. Labs, Inc.*, 471 U.S. 707, 713 (1985)). “Conflict” preemption applies when “‘state law is nullified to the extent that it actually conflicts with federal law,’ even though Congress has not displaced all law in a given area.” *Id.* In most “conflict” preemption cases, the relevant inquiry is whether “state law stands as an obstacle to the accomplishment and execution of the full purpose and objectives of Congress.” *Colacicco*, 521 F.3d at 266 (quoting *Hillsboro*, 471 U.S. at 713).

¹⁸³ See *supra* note 182.

¹⁸⁴ See Guidelines for Evaluating the Env’tl. Effects of Radiofrequency Radiation, 11 F.C.C. Rcd. 15,123, 15,179 (1996) (report and order).

¹⁸⁵ See *id.*

¹⁸⁶ See 47 C.F.R. § 2.1093(c) (2013) (emphasis added).

¹⁸⁷ See 47 C.F.R. § 1.1307(e) (2013).

significance of its actions.”¹⁸⁸ Accordingly, if an application for equipment authorization from a cell phone manufacturer shows that the phones emit more than the specified amount of RF radiation, FCC regulations require the completion of an environmental analysis, in the form of an EIS or similar study, to satisfy NEPA before the application can be considered.

Notably, while the FCC has addressed RF emissions from cell phones to meet its obligations under NEPA and the FCA provisions expressly disavowing any implied preemptive effect, Congress has conferred authority upon another agency to issue preemptive radiation standards for consumer products. Specifically, under the Radiation Control for Health and Safety Act of 1968, Congress directed the FDA to “prescribe performance standards for electronic products to control the emission of electronic product radiation from such products if [the FDA] determines that such standards are necessary for the protection of the public health and safety.”¹⁸⁹ If the FDA issues regulations prescribing such health and safety standards, those regulations preempt conflicting state and local law.¹⁹⁰ Indeed, the cell phone industry, seeking to thwart a consumer class action in federal court in Louisiana under the doctrine of preemption, invoked the FDA’s exclusive authority under the Radiation Act as grounds for dismissal, asserting, “[p]reemption exists under the ‘complex regulatory scheme’ governing RFR emissions created by the Electronic Product Radiation Act, 21 U.S.C. §§ 360hh-360ss.”¹⁹¹ Even after the adoption of its new RF radiation guidelines, the FCC continued to affirmatively disclaim any responsibility for assessing the health and safety effects of wireless telephones. For example, in his April 12, 2001 letter to the GAO addressing the newly released GAO Telecommunications Report, the Managing Director of the FCC emphatically reaffirmed that the agency has no regulatory oversight on matters pertaining to health and safety involving cell phones or any other consumer device, stating, “I reiterate, as the Report notes elsewhere, the

¹⁸⁸ 47 C.F.R. § 2.1093(a) (addressing RF radiation evaluation for cell phones); *see* 11 F.C.C. Rcd. at 15,125 (the guidelines were issued to satisfy NEPA and “the requirements of the [TCA] for a timely resolution of this proceeding”).

¹⁸⁹ 21 U.S.C. § 360kk(a)(1) (2013).

¹⁹⁰ *Id.* § 360ss.

¹⁹¹ Motorola Inc.’s Rule 12(c) Motion for Judgment on the Pleadings and supporting Memorandum of Law, at 1–2, 5–8, *Naquin v. Nokia Mobile Phones, Inc.*, No. 00-2023, 2000 WL 33593205 (E.D. La. Nov. 8, 2000); *see also* Motorola Inc.’s Supplemental Rule 12(c) Brief, at 2, 9, *Naquin*, 2000 WL 33593205.

FCC has neither primary jurisdiction nor expertise in health and safety matters.”¹⁹²

The FCC has itself recognized numerous organizations as having primary responsibility for the development of health and safety guidelines regarding RF radiation emissions in cell phones, including: the FDA, the EPA and even such non-governmental “national and international health agencies and organizations” as the WHO.¹⁹³ The FDA and FCC websites also repeatedly advised of ways to mitigate exposure to potentially dangerous RF emissions. For example, the sites informed consumers that “[i]f you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of RF [radiation], since exposure level drops off dramatically with distance,” while also recommending the use of a headset to provide added distance between the phone and the body,¹⁹⁴ This erratic regulatory history set the stage for equally inconsistent judicial decisions that followed.

VI. STATE LAW CONSUMER LITIGATION RELATED TO RF EMISSIONS

Amidst the scientific and medical debate and against this inconsistent regulatory backdrop, consumers began filing lawsuits against the cell phone industry. One such case, *Farina v. Nokia, Inc.*,¹⁹⁵ was a class action on behalf of Pennsylvania consumers, alleging claims for breach of warranty and other causes of action against manufacturers and sellers of cell phones.¹⁹⁶ Farina’s claim was simple: the cell phone industry had repeatedly, and consistently, promoted their cell phones as being totally “safe.”¹⁹⁷ Under Pennsylvania state warranty law, the burden was on the industry to prove their assurances of “safety,” not on Farina to demonstrate any causal connection to cancer or other adverse

¹⁹² GAO Report, *supra* note 12, at 34. The FCC went on to note that the FCC’s guidelines on RF exposure based on recommendations made by private “standards-setting organizations” such as ANSI and were adopted following “consultation” with other federal health and safety agencies without the formal rulemaking process required of those agencies. *Id.*

¹⁹³ See Cleveland & Ulcek, *supra* note 12, at 16 (“[T]he FCC’s primary jurisdiction does not lie in the health and safety area”). It is of no small interest that the FCC also specifically observed that “much of the non-military research on biological effects of RF energy in the U.S. is being funded by industry organizations . . .” *Id.* at 9.

¹⁹⁴ *FAQs*, *supra* note 7 (emphasis added).

¹⁹⁵ 578 F. Supp. 2d 740 (E.D. Pa. 2008), *aff’d sub nom.* 625 F.3d 97 (3d Cir. 2010), *cert. denied*, 132 S. Ct. 365 (2011).

¹⁹⁶ See *id.*

¹⁹⁷ *Id.* at 747.

health effects.¹⁹⁸ The Complaint sought common law and statutory damages as well as injunctive relief, including requiring that corrective notices be sent to former purchasers and the public at large warning that the manufacturers' unqualified representations of "safety" were not supported by the scientific evidence.¹⁹⁹ Farina also sought a requirement that a protective headset, which already was being sold by cell phone manufacturers as a separate add-on accessory be furnished with each cell phone.²⁰⁰

Shortly after *Farina* was filed in state court, the case was removed to federal court on the basis of "complete preemption" and subsequently transferred to the United States District Court for the District of Maryland as part of multi-district litigation ("MDL") proceedings there.²⁰¹ Farina, along with several other MDL plaintiffs, moved for remand based on lack of federal jurisdiction.²⁰² The Maryland MDL Transferee Court denied that motion and dismissed all of the cases in the MDL on the basis of preemption.²⁰³ On appeal the Fourth Circuit reversed.²⁰⁴

In finding no preemptive effect, the Fourth Circuit first noted that the FCC's RF radiation standard for cell phones was not promulgated pursuant to a substantive mandate found in the TCA but under NEPA.²⁰⁵ Second, the court considered the TCA's preemption provision,²⁰⁶ and found that the statute's "specificity" as to the preemptive scope of the FCC's RF radiation standards for wireless service facilities "weighs against a finding that Congress has an implicit goal of making preemptive the RF radiation standards for all other types of wireless tele-

¹⁹⁸ See 73 Pa. Stat. Ann. § 201.

¹⁹⁹ *Farina*, 578 F. Supp. 2d at 747.

²⁰⁰ *Id.* at 748. The FDA and FCC had themselves stated that protective headsets would mitigate RF exposure. See *id.*

²⁰¹ *Id.* The "complete preemption" doctrine is an exception to the well-pleaded complaint rule. Under the doctrine, "when a federal statute wholly displaces the state-law cause of action through complete pre-emption," the state-law claim is removable because "[w]hen the federal statute completely pre-empts the state-law cause of action, a claim [that] comes within the scope of that cause of action, even if pleaded in terms of state law, is in reality based on federal law." *Beneficial Nat'l Bank v. Anderson*, 539 U.S. 1, 8 (2003).

²⁰² See *Farina*, 578 F. Supp. 2d at 757.

²⁰³ See *In re Wireless Tel. Radio Frequency Emissions Products Liab. Lit.*, 216 F. Supp. 2d 474 (D. Md. 2002), *rev'd and remanded sub nom.* *Pinney v. Nokia, Inc.*, 402 F.3d 430 (4th Cir. 2005).

²⁰⁴ *Pinney v. Nokia, Inc.*, 402 F.3d 430 (4th Cir.), *cert. denied*, 546 U.S. 998 (2005).

²⁰⁵ *Id.* at 457.

²⁰⁶ 47 U.S.C. § 332(c)(7)(B)(iv) (1996).

communications equipment, including wireless telephones.”²⁰⁷ Third, looking to the statute’s savings clause²⁰⁸ and the express “No Implied Effect” provision,²⁰⁹ the Fourth Circuit recognized that these clauses “counsel against any broad construction of the goals of [the relevant statutory provisions] that would create an implicit conflict with state tort law.”²¹⁰ For all these reasons, the Fourth Circuit concluded that the state-law claims did not conflict with the purposes and objectives of Congress and the FCC.²¹¹

Having determined that the plaintiffs’ claims posed no conflict with Congress’s objectives, the court next considered whether the specific relief sought— provision of headsets—would “stand as an obstacle to Congress’ actual goal of establishing a nationwide network of wireless telephone service coverage.”²¹² The court determined that it would not.²¹³ Therefore, the court held, the motion to remand the removed cases should have been granted by the district court because the federal courts lacked subject matter jurisdiction over the state law claims alleged by Farina and the other plaintiffs.²¹⁴

The Fourth Circuit in *Pinney* thus squarely rejected the applicability of the preemption doctrine to the cases in the MDL proceeding to which *Farina* was a party. Because one of the MDL cases, *Naquin v. Nokia, Inc.*, was in federal court on the basis of diversity jurisdiction, the Fourth Circuit also considered whether the claims alleged were actually preempted on the merits—that is, whether preemption was available as a defense, as opposed to a basis for jurisdiction.²¹⁵ The Fourth Circuit similarly rejected the defendants’ express preemption and field preemption arguments, holding that the plaintiffs’ nearly identical consumer claims in *Naquin* were not impliedly preempted by the FCA, TCA or FCC regulations.²¹⁶

Remand to Pennsylvania state court did not, however, end the *Farina* saga. When Farina amended his Complaint to add an additional defendant, that triggered removal under the recently adopted Class

²⁰⁷ *Pinney*, 402 F.3d at 458.

²⁰⁸ 47 U.S.C. § 414.

²⁰⁹ Telecommunications Act of 1996 § 601(c)(1).

²¹⁰ *Pinney*, 402 F.3d at 458.

²¹¹ *Id.* at 445.

²¹² *Id.* at 458.

²¹³ *Id.*

²¹⁴ *Id.* at 459.

²¹⁵ *Id.* at 457–59.

²¹⁶ *Id.*

Action Fairness Act,²¹⁷ so Farina once again found himself in federal court.²¹⁸ Because there was no longer any MDL proceeding for these cases, Farina's case remained in the Eastern District of Pennsylvania.²¹⁹

Back in federal district court, the cell phone defendants filed another motion to dismiss.²²⁰ They argued, as they had in the MDL proceedings, that Farina's claims were expressly preempted and impliedly preempted under both field preemption and conflict preemption theories.²²¹ Although it rejected the express preemption and field preemption arguments, the district court held that the claims were preempted through conflict preemption by the FCC's RF radiation guidelines.²²² Relying on the FCC's obligation under NEPA to determine the environmental impact of its actions, and despite the fact that the FCC's guidelines do not impose a substantive requirement on manufacturers and sellers of cell phones, the court stated that the allegations in the complaint "trample upon the FCC's authority to determine the maximum standard for RF emissions."²²³ In direct contravention to the Fourth Circuit's holding and analysis in *Pinney*, the district court held that Farina's claims "seek to impose legal duties that would conflict directly with federal regulatory mandates because the Defendants could be held liable even though they indisputably complied with the SAR maximum."²²⁴

The Third Circuit affirmed, holding that Farina's claims were neither expressly preempted nor preempted under a field preemption theory but that, notwithstanding the FCA's savings clause and the TCA's explicit prohibition against implied preemption, the case posed an obstacle to the accomplishment of the agency's objectives and, therefore, was impliedly preempted.²²⁵ In effect, the Third Circuit treated the FCC's guidelines arising solely from the exercise of its statutory obligations under NEPA as both a floor and a ceiling on the protections that may be provided consumers to against RF radiation.

There is no indication that Congress intended agency environmental guidelines implementing NEPA to have the effect of superseding state consumer protection laws. To the contrary, Congress expressly declared

²¹⁷ 28 U.S.C. §§ 1332(d), 1453 (2013)

²¹⁸ *Farina*, 578 F. Supp. 2d at 746.

²¹⁹ *Id.* at 757.

²²⁰ *Id.* at 745.

²²¹ *Id.* at 752.

²²² *Id.*

²²³ *Id.* at 769.

²²⁴ *Farina*, 578 F. Supp. 2d at 770.

²²⁵ *Id.*

that “cooperation with State and local governments” was part of the continuing policy of the federal government under NEPA.²²⁶ Nor had the FCC construed NEPA as statutory authority for preempting state and local regulation of the environmental effects of RF radiation. Even before it began regulating this area, the FCC itself recognized that state and local authorities were already regulating human exposure to RF radiation even though NEPA had been in effect for 13 years.²²⁷

Allowing the *Farina* case to go forward would not have somehow upset any delicate federal balance between health concerns and promotion of wireless service throughout the country. Stating the obvious, the Fourth Circuit observed: “[i]t is difficult to understand how a headset requirement . . . would affect the establishment of a nationwide wireless service network or the availability of wireless service coverage.”²²⁸ Indeed, as noted previously, the cell phone industry routinely sells headsets as separate accessories for their cell phones, so these products are already in the marketplace, do not require any retrofitting or redesign of their phones and cannot possibly conflict with any pervasive and exclusive regulatory scheme.

Equating federal regulation, even substantial regulation, with preemption as the Third Circuit did in *Farina* is misguided. Many industries and products are “regulated” by federal agencies but there is no question that even extensive oversight has no inevitable preemptive impact on state consumer laws. The United States Supreme Court decision in *Altria Group Inc. v. Good*²²⁹ made this abundantly clear. *Altria* involved allegations of false advertising in the sale of “light” cigarettes, much like the warranty and related claims alleged in *Farina*.²³⁰ In *Altria*, the Supreme Court rejected the argument that the plaintiffs’ claims, brought under the Maine consumer protection statute, were expressly and impliedly preempted by the Federal Cigarette Labeling and Advertising Act (the “Labeling Act”).²³¹ The Supreme Court reaffirmed established principles governing the preemptive limitation of federal statutes, first reiterating the long-established principle: “[w]hen addressing questions of express or implied preemption, we begin our analysis ‘with the assumption that the historic police powers of the States [are] not to be superceded by the Federal Act

²²⁶ 42 U.S.C. § 4331(a) (2013)

²²⁷ See *Biological Effects of Radiofrequency Radiation Notice*, 89 F.C.C.2d at 253.

²²⁸ *Pinney*, 402 F.3d at 458.

²²⁹ 555 U.S. 70 (2008).

²³⁰ *Id.*

²³¹ *Id.* at 91; 15 U.S.C. §§ 1331 *et. seq.*

unless that was the clear and manifest purpose of Congress.”²³² Continuing, the Supreme Court stated that the presumption against preemption applies with “particular force when Congress has legislated in a field traditionally occupied by the States” such as false and deceptive advertising—the same subject areas involved in *Farina*.²³³ Despite the fact that the declared purpose of the Labeling Act at issue in *Altria* was “to establish a comprehensive Federal program to deal with cigarette labeling and advertising with respect to any relationship between smoking and health,”²³⁴ the Supreme Court held that the plaintiffs’ claims for fraudulent misrepresentation and concealment were not preempted even by such a broad delegation of federal authority.²³⁵ The consumer fraud claims in *Altria*, like the “duty not to deceive” claims prevailing in *Cipollone v. Liggett Group, Inc.*,²³⁶ merely alleged “false or misleading statements” which were not premised on federal law and did not offend either the Labeling Act or any regulatory authority of the Federal Trade Commission (“FTC”).²³⁷

The Supreme Court thus found the plaintiffs’ claims were not “impliedly preempted” in *Altria*.²³⁸ Despite a long history of industry “guidance,” formal litigation, consent orders, official letters and other action by the FTC designed specifically to prevent misleading advertising relating to “light” cigarettes, the plaintiffs’ consumer fraud claims did not conflict with those parallel federal activities in a manner which warranted implied conflict preemption. If anything, the direct regulatory oversight in *Altria* far exceeded the tentative and even expressly disavowed the FCC’s authority over health and safety issues relating to cell phones, to say nothing of the express provisions against preemption in the TCA.

Concurrent with the Third and Fourth Circuits’ consideration of federal preemption of state tort claims brought against cellular manufacturers, another piece of litigation was winding its way through the courts. In *Murray v. Motorola, Inc.*,²³⁹ in which the plaintiffs alleged consumer class action claims similar to those alleged in *Farina* and *Pinney*, the District of Columbia Court of Appeals reached an entirely

²³² *Altria*, 555 U.S. at 77 (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947)).

²³³ *Id.* (citing *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996)).

²³⁴ *Id.* at 78.

²³⁵ *Id.* at 91.

²³⁶ 505 U.S. 504 (1992).

²³⁷ *Altria*, 555 U.S. at 80–83.

²³⁸ *See id.* at 85–90.

²³⁹ 982 A.2d 764 (D.C. 2009).

different conclusion.²⁴⁰ Rejecting the Fourth Circuit’s analysis, *Murray* held that “state regulation” that would “alter the balance” that the FCC sought to achieve through its RF regulation was preempted.²⁴¹ It found that state law claims based on allegations about the adequacy of the FCC guidelines or the safety of FCC-authorized cell phones were therefore preempted.²⁴² The D.C. Circuit further found that claims seeking damages based on the non-thermal effects of cell-phone radiation were also preempted, despite the fact that the FCC guideline does not address non-thermal effects at all.²⁴³

Contrary to the Third Circuit’s decision in *Farina*, however, *Murray* did allow some claims to go forward. The court held that claims about false or misleading statements or omissions that do not depend on proof that cell phones are unreasonably dangerous are not preempted.²⁴⁴ For example, *Murray* permitted a claim based on the allegation that defendants falsely represented that “[r]esearch has shown that there is absolutely no risk of harm associated with the use of cell phones” to go forward.²⁴⁵ Importantly, the surviving claims in *Murray* directly mirror those brought by *Farina* before the Third Circuit.

Thus, as the law now stands, the viability of state-law claims arising out of the sale of cell phones—and the industry’s representations about the safety of those devices—depends entirely on the venue in which those suits are brought. Consumers in Maryland and other states in the Fourth Circuit can bring claims that consumers in Pennsylvania and other states of the Third Circuit cannot—at least not in their courts. Consequently, consumers near the Delaware-Maryland border in Newark, Delaware are barred entirely from bringing any consumer claims under the TCA in their local state or federal courts, while consumers just a few miles away in Elkton, Maryland have the full arsenal of state law remedies for breach of warranty and other statutory and common law claims. Further South in Washington, D.C., consumers have a mixed bag of rights and remedies. The inconsistent availability of these legal protections depends entirely on where the consumer brings his or her case, although the source of those limitations is the same

²⁴⁰ *Id.* at 768,

²⁴¹ *Id.* at 776.

²⁴² *Id.* at 789.

²⁴³ *Id.* at 778–79.

²⁴⁴ *Id.* at 783.

²⁴⁵ *Id.* at 784. (*Murray* also held that claims based on injuries caused by phones acquired prior to August 1996, when the FCC issued the current standard, or phones that did not comply with the current standard, were not preempted. *Id.* at 781–82.)

federal statute interpreted and applied dissimilarly and inconsistently by those courts.

VII. THE COURTS' CONFLICTING DECISIONS EXACERBATE AN EXISTING DISPUTE OVER WHETHER FEDERAL AGENCY REGULATIONS MAY IMPLIEDLY PREEMPT STATE LAW EVEN WHEN THE AUTHORIZING STATUTE EXPRESSLY DISCLAIMS ANY SUCH IMPLIED PREEMPTION

The FCC derives its authority from Congress, which, through the FCA, delegated to the FCC authority to regulate communications by wire and radio and, in the TCA, directed the FCC to complete its then-pending regulations regarding RF emissions within 180 days. As noted above, Congress also expressly limited the preemptive effect of those regulations on state laws concerning the location or construction of brick and mortar telecommunications facilities. Congress further specified that the FCA does not “in any way abridge or alter” common-law or statutory remedies.²⁴⁶ To remove any further doubt about the limits of authority conferred on the FCC, Congress explicitly stated, in a TCA provision carefully entitled “No Implied Effect,” that the TCA “shall not be construed to modify, impair, or supersede Federal, State, or local law unless expressly so provided.”²⁴⁷ Although the Supreme Court has held that a general savings clause such as Section 414 of the FCA does not bar the application of conflict preemption,²⁴⁸ it has never addressed the effect of a statutory provision that explicitly disclaims any implied preemptive effect.

These cases raise that important question of whether the objectives of an agency regulation may preempt state law where the statute authorizing or requiring the agency to act explicitly states that it has no implied preemptive effect. Put simply, may a court find implied preemption on the basis of “frustration of purposes” of a regulation promulgated pursuant to a statute that Congress has stated does not impliedly preempt state law? On this question, the courts are in conflict.

First, courts have treated the “No Implied Effect” clause of Section 601(c)(1)—in strikingly dissimilar ways. The Fourth Circuit in *Pinney* held that the clause showed that Congress did not intend RF radiation standards for cell phones to be preemptive.²⁴⁹ In direct conflict,

²⁴⁶ 47 U.S.C. § 414 (1934).

²⁴⁷ Telecommunications Act of 1996 § 601(c)(1).

²⁴⁸ See *Geier v. Am. Honda Motor Co.*, 529 U.S. 861, 869 (2000).

²⁴⁹ See *Pinney*, 402 F.3d at 458. Likewise, the Seventh Circuit has held that Section 601(c)(1) “precludes a reading that ousts the state [law] by implication.” AT&T

the Third Circuit, while acknowledging that “it is conceivable that § 601(c)(1) could be dispositive,” held that Congress’s express disavowal of implied preemption was, in essence, ineffective because “a savings provision does not ‘bar the ordinary working of conflict pre-emption principles.’”²⁵⁰ The Third Circuit thus construed the “No Implied Effect” provision to mean only that “Congress’s objectives are more limited than they might otherwise be characterized.”²⁵¹ The court did not explain how its holding represented merely a “more limited” reading or how its reading was consistent with Section 601(c)(1). Similarly, in a footnote in *Murray*, the District of Columbia Court of Appeals casually dismissed Section 601(c)(1) and *Pinney*’s reliance on it.²⁵²

The question presented by Section 601(c)(1) is likely to recur. On February 2, 2011, a currently pending bill introduced in the Oregon legislature asked the cell phone industry to place disclosure notices stating that the safety of the devices has not been established in cell phone packaging.²⁵³ San Francisco has adopted an ordinance requiring disclosure of the amount of RF radiation emitted by cell phones, which is currently being challenged in federal district court in part on the theory that the ordinance is preempted.²⁵⁴

More broadly, on the question of whether Congress may statutorily grant authority to regulate while withholding implied authority to preempt, the Third Circuit’s decision conflicts in principle with decisions construing the Nutrition Labeling in Education Act (“NLEA”), which similarly disclaims implied preemptive effect.²⁵⁵ In conflict with the

Commc’ns of Ill. v. Ill. Bell Tel. Co., 349 F.3d 402, 410 (7th Cir. 2003) (rejecting challenges to Illinois statute mandating methodology for determining rate that local telephone company could charge to use its network).

²⁵⁰ *Farina*, 625 F.3d at 131.

²⁵¹ *Id.* at 132.

²⁵² *Murray*, 982 A.2d at 778 n.19.

²⁵³ The pending bill (designated LC 1273 in the state legislature) would require a warning on cell phone packages and the back of the phones stating:

This is a radio-frequency (RF), radiation emitting device that has nonthermal biological effects for which no safety guidelines have yet been established. Controversy exists as to whether these effects are harmful to humans. Exposure to RF radiation may be reduced by limiting your use of this device and keeping away from the head and body. See Cecilia Kang, *Oregon considers cell phone radiation label*, WASH. POST (Feb. 8, 2011), http://voices.washingtonpost.com/posttech/2011/02/oregon_state_senator_chip_shie.html.

²⁵⁴ See *CTIA - Wireless Ass’n v. City & County of San Francisco*, 2012 U.S. Dist. LEXIS 685 (N.D. Cal. Jan. 3, 2012).

²⁵⁵ See Nutrition Labeling and Education Act of 1990, Pub. L. No. 101-535, § 6(c)(1), 104 Stat. 2353 (1990) (NLEA “shall not be construed to preempt any provision of State law, unless such provision is expressly preempted”).

Third Circuit, courts have held that this provision precludes implied preemption.²⁵⁶ Also contrary to the Third Circuit's treatment of Section 601(c)(1), the FDA reads the NLEA provision to "clearly manifest[] Congress's intention" that there be no preemption under the NLEA outside the scope of that statute's express preemption provision.²⁵⁷

Other statutes, too new to have been addressed in litigation, also expressly limit or eliminate any implied preemptive effect.²⁵⁸ For example, Section 1041(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act states:

Relation to Other Provisions of Enumerated Consumer Laws That Relate to State Law.—No provision of this title, except as provided in section 1083, shall be construed as modifying, limiting, or superseding the operation of any provision of an enumerated consumer law that relates to the application of a law in effect in any State with respect to such Federal law.²⁵⁹

²⁵⁶ Compare *Holk v. Snapple Beverage Corp.*, 575 F.3d 329 (3d Cir. 2009), *Lockwood v. ConAgra Foods, Inc.*, 597 F. Supp. 2d 1028, 1032 (N.D. Cal. 2009), and *N.Y. State Rest. Ass'n v. N.Y. City Bd. of Health*, 509 F. Supp. 2d 351, 355 (S.D.N.Y. 2007), with *Dowhal v. SmithKline Beecham Consumer Healthcare*, 88 P.3d 1, 7-9 (Cal. 2004) (finding a state law impliedly preempted notwithstanding a savings clause directed expressly to that state law).

²⁵⁷ State Petitions Requesting Exemption From Federal Preemption, 56 Fed. Reg. 60,528, 60,530 (Nov. 27, 1991) (codified as 21 C.F.R. pt. 100); see State Petitions Requesting Exemption From Federal Preemption, 58 Fed. Reg. 2462 (Jan. 6, 1993) (codified as 21 C.F.R. pt. 100) ("[T]he *only* State requirements that are subject to preemption are those that are affirmatively different on matters that are covered by [the express preemption provision] of the act.") (emphasis added).

²⁵⁸ See Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 1041, 124 Stat. 1376 (2010). "Sec. 1041(a)(2) states: "Rule of Construction.—This title, other than sections 1044 through 1048, may not be construed as annulling, altering, or affecting, or exempting any person subject to the provisions of this title from complying with, the statutes, regulations, orders, or interpretations in effect in any State, except to the extent that any such provision of law is inconsistent with the provisions of this title, and then only to the extent of the inconsistency."

²⁵⁹ *Id.* at § 1041(b); see also Consumer Product Safety Improvement Act, Pub. L. No. 110-314, § 231, 122 Stat. 3016 (2008). Section 231 states:

Rule With Regard to Preemption.—The provisions of [statutes implemented by the Consumer Product Safety Commission] establishing the extent to which those Acts preempt, limit, or otherwise affect any other Federal, State, or local law, any rule, procedure, or regulation, or any cause of action under State or local law may not be expanded or contracted in scope, or limited, modified or extended in application, by any rule or regulation thereunder, or by reference in any preamble, statement of policy, executive branch statements, or other matter associated with the publication of any such rule or regulation. In accordance with the provisions of those Acts, the

The Third Circuit's reasoning calls into doubt the efficacy of and deference afforded to these deliberate attempts by Congress to limit the preemptive scope of important enactments, and will encourage litigants and courts to ascribe implied preemptive effect to regulations promulgated under these laws in defiance of Congress's expressly stated intent.

This question will only grow in importance in light of Congress's increasing use of no-implied-preemption clauses. To ensure that states do not misunderstand the scope of the authority they retain this split requires definitive resolution by the Supreme Court.

Apart from violating Congress's express declaration that there should be "no implied preemption" of state law rights is the disturbing deference given to the FCC's guidelines—admittedly adopted by the FCC not under the FCA, TCA or within any sphere of the agency's specific expertise, but NEPA—a general statute applicable to all federal agencies.

The FCC guidelines held to bar Farina's state law breach of warranty claims do not impose a substantive standard on wireless phones. Rather, as the regulation and the regulatory history make clear, 47 C.F.R. § 2.1093(c) states the level of RF radiation that a cell phone can emit without triggering the FCC's NEPA obligation to evaluate the device's environmental effect before authorizing the device for sale. The FCC did not issue the standard to impose a substantive obligation on companies, but merely acted "[t]o meet its responsibilities under NEPA."²⁶⁰

Accordingly, if a company applies for authorization to sell a cell phone that does not meet the standard, FCC regulations do not require the FCC to reject the application or the company to make any change to its product. They require only the preparation of an environmental assessment before the application can be granted.²⁶¹ Similarly, meeting the FCC "guidelines" does not mean that the company is in compliance with some federal requirement that displaces any others to which it might

Commission may not construe any such Act as preempting any cause of action under State or local common law or State statutory law regarding damage claims.

²⁶⁰ Guidelines for Evaluating the Envtl. Effects of Radiofrequency Radiation, 11 F.C.C. Rcd. at 15,125; see *Biological Effects of Radiofrequency Radiation Report and Order*, 100 F.C.C.2d at 561 ("Although the Commission has neither the expertise nor the authority to develop its own health and safety standards, we are required by the national Environmental policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321 et seq. (1976) to consider whether Commission actions will significantly affect the quality of the human environment.").

²⁶¹ See *Biological Effects of Radiofrequency Radiation Report and Order*, 100 F.C.C.2d at 560.

be subject. It means only that the agency does not have to take the procedural steps required by NEPA before it acts.²⁶²

To be sure, cell phone manufacturers have generally chosen to stay within the level stated in the guidelines so as to avoid the delay that would result if the FCC required the requisite NEPA analysis. Nonetheless, the regulation is, by express statement of the FCC, a regulation issued to implement NEPA.²⁶³ And NEPA is a procedural statute that “does not mandate particular results” but rather “imposes only procedural requirements on federal agencies.”²⁶⁴

No court has ever before held that an agency’s decision to categorically exclude an action from NEPA’s procedural requirements preempts application of state substantive law applicable to private conduct.²⁶⁵ And, in contrast to the Third Circuit, the Fourth Circuit in *Pinney* found no preemption in part because the regulations on which the preemption theory was based were promulgated pursuant to NEPA, not pursuant to any mandate of or delegated authority under the FCA or TCA.²⁶⁶

The Third Circuit’s holding has implications for numerous federal regulatory agencies, regulated entities, and the public. NEPA’s requirements apply to *every* agency and to *any* action that might have a significant environmental effect.²⁶⁷ Under the Third Circuit’s analysis, agency regulations identifying regulatory actions that will not trigger NEPA requirements could have broad substantive, preemptive effect on

²⁶² *See id.*

²⁶³ 47 C.F.R. § 2.1093(a) (“Requirements of this section are a consequence of Commission responsibilities under [NEPA] to evaluate the environmental significance of its actions.”); Guidelines for Evaluating the Env’tl. Effects of Radiofrequency Radiation, 11 F.C.C. Rcd. at 15,125; FCC, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, 12 F.C.C. Rcd. at 13,499 (amending parts of 1996 guidelines and reiterating that rules issued to comply with NEPA).

²⁶⁴ *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 756 (2004) (internal quotation marks omitted); *see Robertson*, 490 U.S. at 350 (“[I]t is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.”).

²⁶⁵ *Murray* addressed the fact that the FCC’s RF regulations are NEPA regulations only in a footnote, finding that the distinction between NEPA regulations and substantive regulations was “not . . . important.” The court suggested that by instructing the FCC to finalize its pending rulemaking, the TCA had somehow transformed the NEPA guideline into a substantive requirement. 982 A.2d at 778 n.19.

²⁶⁶ *Pinney*, 402 F.3d at 457; *see also Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.*, 435 U.S. 519, 548 (1978) (“NEPA does not repeal by implication any other statute.”) (citation omitted).

²⁶⁷ *See* 42 U.S.C. § 4332(2)(C).

state laws regulating the conduct of the private actors whose activities would be considered in a NEPA analysis, if one were required.²⁶⁸

Similarly, under the Third Circuit's approach, agency decisions that an environmental assessment is not required in particular cases because of the absence of a significant environmental impact could suddenly operate to preempt the application of state environmental, safety, health, and consumer protection standards to the underlying private conduct. Yet "it is apparent that the express intent of NEPA is not to exclude state environmental regulation, but to encourage cooperation with local governments to achieve the Congressional goal of environmental protection."²⁶⁹ Indeed, NEPA has long co-existed with an array of state environmental laws.²⁷⁰

The potential wide ranging effect of arguments of "NEPA preemption" are far-reaching, and have further muddied the waters of the already murky preemption pond. When this issue eventually reaches the United States Supreme Court, as it almost certainly will, the Court should respect the explicit directives of Congress in the TCA, and reject the sweeping preemption adopted by the Third Circuit in *Farina*.

²⁶⁸ See, e.g., 7 C.F.R. § 372.5(c) (2013); 10 C.F.R. § 1021.410 (2011); 18 C.F.R. § 380.5 (2012); 21 C.F.R. §§ 25.30–25.34.; Bureau of Land Mgmt., Dep't of Interior, 516 Dep'tal Manual 11, § 11.8(b) (2008).

²⁶⁹ Joan Newman, Comment, *A Consideration of Federal Preemption in the Context of State and Local Environmental Regulation*, 9 UCLA J. ENVTL. L. & POL'Y 97, 108 (1990).

²⁷⁰ See, e.g., Nicholas Robinson, *SEORA's Siblings: Precedents from Little NEPA's in the Sister States*, 46 ALB. L. REV. 1155, 1157–58 & n. 16–19 (1982) (citing state "mini-NEPA" laws).