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Federal Communications Commission

445 12th Street SW, Washington, DC 20554

Phone: 1-888-225-5322

TTY: 1-888-835-5322

ASL Video Call: 1-844-432-2275

Q. Do you wish to add anything here not included in your statement in Exhibit A?

A.

Q. Do you want to submit the statements in Exhibit A to the Maine Public Utility Commission for consideration in its pending proceeding to investigate the safety of smart meters?

A. Yes. I submit the attached sworn testimony in support of complainants Ed Friedman, et al in their case before the Maine PUC as evidence that smart meters are not safe.

[redacted]

STATE OF MICHIGAN
WASHTENAW, ss

January 28, 2013

Personally appeared the above-named [redacted], and stated under oath that the foregoing Affidavit made by her is true and based upon her own personal knowledge, information or belief, and so far as upon information and belief, she believes the information to be true. Before me,

Kathleen A Mulligan

Notary Public

Kathleen A Mulligan

Name Typed or Printed

My Commission Expires: 9-21-14

KATHLEEN A. MULLIGAN
Notary Public, Washtenaw County, Michigan
Acting in Washtenaw County, Michigan
My Commission Expires September 21, 2014

EXHIBIT A

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application and request of the DETROIT EDISON COMPANY seeking approval and authority to implement its proposed Advanced Metering Infrastructure opt out program.	))))	Case No U-17053

QUALIFICATIONS AND DIRECT TESTIMONY OF [redacted]

QUALIFICATIONS OF [redacted]

Q. Do you swear that the testimony you are about to give is the truth, the whole truth, and nothing but the truth?

A. I do.

Q. Please state your name, address and contact information.

A. My name is [redacted]

Q. On whose behalf are you testifying?

A. That of Intervenors Linda Kurtz and Cynthia Edwards.

Q. What are your qualifications to testify?

A. I take my electric service from Detroit Edison. I have been affected by the smart meter installation both in terms of my health and in terms of earning an income.

TESTIMONY 1

DIRECT TESTIMONY OF [redacted]

Q. What is the purpose of your testimony?

A. To provide information that establishes that there is a need for a no-fee opt-out and the need for an analog meter option. To provide information that may help the Commission in determining whether smart and digital meters create certain kinds of economic, medical, social, or other harm or hardship, as outlined in Intervenor Linda Kurtz's Petition for Intervention, to some or all persons such that Detroit Edison and the Commission must not require those who are or who are likely to be so harmed to have a smart or digital meter placed on their home or place of business or to be otherwise deprived of rights and liberties, as outlined in Intervenor Kurtz's Petition for Intervention, by the deployment of the advanced metering infrastructure, smart meters, or digital meters, and, in the alternative, that such persons must be able to avoid such harm to their person and property without being charged a fee.

Q. How long have you lived at your current residence?

A. I have lived in my home since 1981, for 31 years. I own my home.

Q. What do you do for a living?

A. I worked as a [redacted] for 18 years. For the past 13 years I have worked as a [redacted]

Q. When was a smart meter installed on your home?

A. July 18, 2012.

Q. Did you know it had been installed on your home?

A. No, I didn't. Later, when I couldn't sleep, I called DTE, and they told me the date it had been installed.

Q. Something led you to call DTE. What was that?

A. Never in my life have I had a problem sleeping. "When my head hits the pillow," as the saying goes, "I'm out like a light." But now I was lying awake for hours without falling asleep, night after night. 12 am, 2 am, 4 am, I'm still awake! I wondered, "What's going on?"

I talked to a friend, telling him my dilemma, and he told me that the smart meters could alter your sleep. "What are smart meters?" I asked. I had never heard of them.

Q. So prior to your conversation with your friend, you knew nothing about smart meters?

A. No.

q. So you weren't anxious about smart meters and thus experiencing insomnia?

A. No. Like I said, I had never heard of them before. Like I said, my entire life, I have slept like a rock—that is until a smart meters was installed on my home.

Q. Prior to talking to your friend, did you know that a smart meter had been installed on your home?

A. No. I was never contacted or asked if this meter could go on my home. After I talked to my friend, I went to look to see if a smart meter had been installed on my home. It had been. I contacted DTE immediately, this was some time in August, asking them to take this meter off my house. They said I was the first person to call and complain about the smart meter causing any problems. The representative said she was sure I must have had problems sleeping before.

Q. What did DTE tell you they would do?

A. They said they could not take the meter off my house and at this time there was no opt-out program but they were working on it.

Q. What did you do next?

A. I continued to call and call and call them and said, "Please take this meter off my house. I can't sleep, I can't work." I called at 3 a.m. one night when I couldn't sleep. Like the first representative, this representative said he'd never heard of such a problem. I finally set up a tent in my backyard, after weeks of not sleeping. I slept really well, not quite as well as when I was sleeping in my own bed in my own home before I had a smart meter, but no one sleeps quite as well in a tent as in their own bed. It has been very stormy and windy this last month, and about three weeks ago the tent blew over on me at about 3 a.m. It covered me so thoroughly, and was so heavy, I thought I was going to suffocate!

Q. Did you continue to sleep in the tent?

A. I moved back into my house because every time I set the tent up, it blew back down the winds were so high. My nights are now sleepless.

Q. Do you experience any other health problems or symptoms from the smart meter?

A. At night, I lie there feeling a vibration going through all of my body and my ears ring loudly. [redacted] is really hard work, and I wonder some days how I am going to make it. The sleep deprivation makes me extremely fatigued and worn out. Day after day after day of exhaustion has made me feel suicidal at times. I just don't know how I can keep going on! I have felt such a fatigue and depression. This is totally affecting my personality and thus my friendships and other relationships. This is affecting my productivity at work – I am so tired! My memory has been affected – I will be talking to a person and totally go blank and can't finish my sentence. I have pain in my body I haven't had before—I feel an achiness around my joints. This has been progressive. In the last two days, I have begun feeling an achiness around the vertebrae in my back.

I feel a physical agitation in my body. I work outside all day. I come home, and within a couple hours, I feel so agitated in my body. When I was able to sleep in my tent, I would look so forward to going outside. People would say, "[redacted], you can't sleep out there, it's so cold." And I would be so happy because I didn't feel that agitation outside and I could sleep.

I experience ringing in my ears whenever I am in any building with a smart meter. At one client's house, the ringing in my ears was so loud I couldn't believe it. Buildings with fluorescent lights are particularly bad.

Q. **How do you know it is smart meters that are affecting your health?**

A. I know because I never had a problem before smart meters.

Q. **Did you have any health problems prior to the installation of smart meters? If so, what were they and when did they begin?**

A. Hypothyroidism. This was diagnosed about twelve years ago.

Q. **Does this cause fatigue?**

A. No, because I take medication for it.

Q. **So could this be what is causing you to have trouble sleeping at night?**

A. No, because I never have had trouble sleeping, that is, not until the smart meters were installed. The fatigue was caused by the hypothyroidism, not by lack of sleep.

Q. **Any other health conditions?**

A. I feel like some asthma, though it's never been diagnosed.

Q. **Have you had sensitivity to any other electrical or wireless devices other than smart meters?**

A. Yes. I am extremely affected by my cell phone. I feel agitated when I am using it, and I have ever since I got it five years ago. I have started to use the speaker phone rather than hold the phone against my ear. That helps slightly.

Q. **You said you have contemplated suicide after experiencing day after day of unending fatigue since smart meter installation. Have you every contemplated suicide prior to this?**

A. Never. Definitively never. But after I was so exhausted after not sleeping for days, I was going to work one day, completely exhausted. I thought, "How can anyone go on day after day like this without sleeping?" I thought, "Now I know why people think about suicide. People that don't sleep, how do they keep on going?"

Q. **Have the health effects you experience as a result of smart meters affected your ability to work and earn a living? If the answer is yes, describe how.**

A. I have been late for work because I have needed to try to rest—I guess I can't really call it sleep anymore. I've never actually missed work, but I have been late for work. My productivity is less. I've never been late for work in the past.

Q. Have the health effects you experience as a result of smart meters affected your ability to interact socially with others? If the answer is yes, describe how.

A. Yes. When you are so tired, you don't even want to socialize with anyone. I feel angry, so fatigued. All I think about is sleeping.

It's negatively affected my most intimate relationship in the last few months. It's had a huge impact. The lack of sleep has made me so fatigued and angry, and it's hard to love someone when you feel that way.

Q. Have the health effects you experience as a result of smart meters affected your ability to access public services, such as the public library, government offices? If the answer is yes, describe how.

A. Yes, because going into any building with a smart meter, I feel agitated.

Q. Have the health effects you experience as a result of smart meters affected your ability to freely assemble outside? If the answer is yes, describe how.

A. No.

Q. Have the health effects you experience as a result of smart meters affected your ability to access religious or spiritual services? If the answer is yes, describe how.

A. My spiritual life is outside, so no, it hasn't.

Q. Have the health effects you experience as a result of smart meters affected your ability to freely access health services? If the answer is yes, describe how.

A. No, but I haven't been to any health-care facility since smart meters were installed, except for the UM, where they don't have smart meters. Given how I react in buildings with smart meters, I expect that it will affect me once I do need to see a health-care professional who is in a building with smart meters.

Q. Have the health effects you experience as a result of smart meters affected your ability to perform one or more major life activities not already mentioned? If the answer is yes, describe what activities and how the effects have affected your performance of these activities.

A. Interacting with others. Reading, because I get so agitated in my body and I can't concentrated. I used to love to read, and I kept wondering, "Why can't I read now." Inability to think, concentrate, comprehend. Sleeping, obviously. Performing manual tasks because being in the house is so hard—how can I clean my house, wash my dishes, etc when I just need to get out of my house.

As far as physical labor goes, I am more tired, it's harder to be productive.

Breathing—it has been harder for me to breathe in the house. I have asthma.

My memory is a lot worse. I have to write everything down now. My son keeps telling me, "Mom, I told you that yesterday."

Q. **Has your ability to live in your home been affected by the installation of smart meters?**

A. Totally. I think that has been covered.

Q. **Is there anything else you wish to say about how smart meters have affected your health and/or your life?**

A. Yes. My sixteen-year-old son, [redacted] sleeps a couple feet away from the meter. He has juvenile diabetes. We just went to see his endocrinologist, Dr. [redacted] at the University of [redacted] Hospital on November 1. He's been going there for 2 years, since his diagnosis when he was 14. There is this number called A1c. There's this blood test they give the kids called A1C. It's a blood test that shows what his blood sugars combined were for the last three months. His numbers were always below 7. His last appointment, they were 6.8. [Exhibit 1.] The doctors have always been so happy because they want these numbers to always be below 7.

I have [redacted] on a very clean, organic diet and he exercises playing hockey and lacrosse, all of which help keep his blood sugars at a good level. On November 1, his A1c was taken, and the level had shot up to 9.5. [Exhibit 1.] The doctor if anything had changed as far as his diet and exercise. Nothing had. It's very clear that has blood sugar levels have shot up because of the smart meters. Nothing else in his life has changed, and the levels have been consistent for two years. There's no other explanation. When levels are above 7, it wreaks havoc on the body. Many things can happen to the body, to his limbs, to his organ.

Dr. [redacted] has sent a letter to DTE describing her findings and stating that the smart meter needs to be taken off the home.

From a *Prevention Magazine* article that I read, I have learned that the EMFs emitted by smart meters can elevate blood sugar levels. They discussed work by Dr. Magda Havas of Trent University, whose research has shown that voltage transients can elevate blood sugar levels of diabetics. [Attached as Exhibit 2. Pertinent area is on page 6 of Exhibit 2, highlighted in yellow.]

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application and request)		
of the DETROIT EDISON COMPANY seeking)		
approval and authority to implement its	)	Case No U-17053
proposed Advanced Metering Infrastructure)		
opt out program.	)	

EXHIBITS OF

[redacted]

[redacted]

Printed 11/8/12 4:03 PM

[redacted]

11/1/2012 8:00 AM Office Visit
MRN: 040245480

Description: 16 year old male
Provider: [redacted]
Department: Mh Ped Endocrinology

Diagnoses	Reason for Visit
Diabetes mellitus - Primary 250.00	Diabetes Mellitus
Long-term insulin use V58.67	

Vitals - Last Recorded

BP	Pulse	Temp(Src)	Ht	Wt	BMI
114/61	58	97.7 °F (36.5 °C) (Oral)	1.816 m (5' 11.5")	68.8 kg (151 lb 10.8 oz)	20.86 kg/m2

Progress Notes

[redacted] MD 11/5/2012 8:38 AM Signed

[redacted] is a 16 year 10 month old boy who is seen in Pediatric Diabetes Clinic for follow-up of Type I diabetes. He was diagnosed with Type I diabetes in May 2010. He is accompanied by his mother.

MEDICATIONS:
Lantus 22 units at bedtime
Novolog: Insulin/Carb ratio 1:13 for breakfast, lunch, and dinner
correction 1:100>150 at breakfast and lunch

Other relevant medications: None

INTERVAL HISTORY: No interim illness. Over the summer they attended an intro to pump class. He said he was interested in the pump but never completed the workbook. They did not bring blood sugar log to review. He reports checking 3-4 times/day. He states that he has low BG in the 70's after hockey practice in the afternoon.He treats these with power bars, and we discussed the need for him to have a fast acting sugar with him. He will not have any periods where he is not in a sport from this point. He has is not driving often. Mother is very concerned that a smart meter placed on their home by the utility company over the summer has caused a worsening of his BS.

History of severe hypoglycemia: No.
History of significant # of (non-severe) hypoglycemic episodes: non-reported 2-3 per week. Occasional 50-60 after hockey practice. He feels shaky and has a granola bar.
History of DKA: None since diagnosis
History of DM related hospital admission: None since diagnosis

REVIEW OF SYSTEMS:
10 systems reviewed: Yes reviewed 10/14 see pediatric diabetes outpatient note imaged document.

SOCIAL HISTORY: Parents are divorced. Both brothers are away at college. He is in 11th grade. Active in hockey and LaCrosse.

PHYSICAL EXAMINATION:

BP 114/61 Pulse 58 Temp(Src) 97.7 °F (36.5 °C) (Oral) Ht 181.6 m (82%) Wt 68.8 kg (64%) BMI 20.86 kg/m2 (44%)

In no acute distress.
External ears and canals are normal.
Nasopharynx is patent.

Oropharynx has moist mucous membranes and no lesions.
Neck is supple; no lymphadenopathy or masses. Mildly enlarged thyroid with normal texture.
Heart has a regular rate and rhythm, without significant murmur.
Lungs are clear to auscultation; no wheezes or rhonchi.
Abdomen has positive bowel sounds. It is soft and nontender, without organomegaly or masses.
Extremities are warm and dry, without abnormalities.
Normal tone, bulk, and strength.
Acanthosis nigricans : No
Lipodystrophy at injection sites : Yes, left abdomen
Feet Examination - examined : no

A1c: Previous 6.8% Today 9.6%

ASSESSMENT AND PLAN:
Diagnosis - Type 1 diabetes mellitus - worsening control.

1. Insulin Dose Adjustments: Since his A1c has worsened and he reports normal BS, we will increase his lantus dose to 24 units. We discussed with him the importance of diligent diabetes care and his A1c goal. Mother was concerned that the worsening was due to the smart meter. We also discussed that he may be finishing his honeymoon period. We instructed them to fax in BS in 2 weeks so that further dose adjustments can be made. He had annual labs drawn today.

Lantus 24 units at bedtime
Novolog: Insulin/Carb ratio 1:13 for breakfast, lunch, and dinner
correction 1:100>150 at breakfast and lunch

2. Follow-up in 3 months.

Blood Sugar Monitoring Goals
At least 4-6 times daily, including before hockey

HbA1C Goal
<7.5%

Nutritional Goals
Well-balanced, healthy meals

Behavioral / Educational Goals
Record glucose on logs once weekly

Counseled parents/patient on:
Importance of controlling BG
ADA goal of A1c<7.5%
Risks of NOT monitoring BG
Importance of recording/reviewing BG
Sx, tx, prevention and risk of hyperglycemia
Sx, tx, prevention and risk of hypoglycemia
Carb Counting
Site rotation
Parents involvement in diabetes care

EXHIBIT 2

Prevention Magazine Article

http://www.prevention.com/health/healthy-living/electromagnetic-fields-and-your-health

Is Dirty Electricity Making You Sick?

Why Are Electromagnetic Fields Dangerous?

Several developments have highlighted the growing hazards of EMF pollution—and the crucial need to address them.

A report that cited more than 2,000 studies found that chronic exposure to even low-level radiation (like that from cell phones) can cause a variety of cancers, impair immunity, and contribute to Alzheimer's disease and dementia, heart disease, and many other ailments. One likely way: EMFs open the blood-brain barrier, causing blood vessels to leak fluid into the brain and damage neurons.

What's more, a less-well known kind of EMF, known as "dirty" or transient electricity, may play an even more damaging role. Transients are largely by-products of modern energy-efficient electronics and appliances—from computers, refrigerators, and plasma TVs to compact fluorescent lightbulbs and dimmer switches—which tamp down the electricity they use. **This manipulation of current creates a wildly fluctuating and potentially dangerous electromagnetic field that essentially charges up the electrons in every cell of your body. Some research suggests that by overlapping the body's signaling mechanisms, transients may interfere with the secretion of insulin, drown out the call and response of the immune system, and cause other physical havoc.**

For more information on the dangers of electromagnetic fields, read our full investigative report here. (below)

Is Dirty Electricity Making You Sick?

Too many electromagnetic fields surrounding us—from cell phones, wifi, and commonplace modern technology—may be seriously harming our health. Here's how to minimize your exposure.

Read more: http://www.prevention.com/health/healthy-living/electromagnetic-fields-and-your-health#ixzz22iCT1oED

The California Cluster

IN 1990, the city of La Quinta, CA, proudly opened the doors of its sparkling new middle school. Gayle Cohen, then a sixth-grade teacher, recalls the sense of excitement everyone felt: "We had been

in temporary facilities for 2 years, and the change was exhilarating." But the glow soon dimmed. One teacher developed vague symptoms-- weakness, dizziness--and didn't return after the Christmas break. A couple of years later, another developed cancer and died; the teacher who took over his classroom was later diagnosed with throat cancer. More instructors continued to fall ill, and then, in 2003, on her 50th birthday, Cohen received her own bad news: breast cancer. "That's when I sat down with another teacher, and we remarked on all the cancers we'd seen," she says. "We immediately thought of a dozen colleagues who had either gotten sick or passed away." By 2005, 16 staffers among the 137 who'd worked at the new school had been diagnosed with 18 cancers, a ratio nearly 3 times the expected number. Nor were the children spared: About a dozen cancers have been detected so far among former students. A couple of them have died.

Prior to undergoing her first chemotherapy treatment, Cohen approached the school principal, who eventually went to district officials for an investigation. A local newspaper article about the possible disease cluster caught the attention of Sam Milham, MD, a widely traveled epidemiologist who has investigated hundreds of environmental and occupational illnesses and published dozens of peer-reviewed papers on his findings. For the past 30 years, he has trained much of his focus on the potential hazards of electromagnetic fields (EMFs)--the radiation that surrounds all electrical appliances and devices, power lines, and home wiring and is emitted by communications devices, including cell phones and radio, TV, and WiFi transmitters. His work has led him, along with an increasingly alarmed army of international scientists, to a controversial conclusion: The "electrosmog" that first began developing with the rollout of the electrical grid a century ago and now envelops every inhabitant of Earth is responsible for many of the diseases that impair--or kill--us.

Milham was especially interested in measuring the ambient levels of a particular kind of EMF, a relatively new suspected carcinogen known as high-frequency voltage transients, or "dirty electricity." Transients are largely by-products of modern energy-efficient electronics and appliances--from computers, refrigerators, and plasma TVs to compact fluorescent lightbulbs and dimmer switches--which tamp down the electricity they use. This manipulation of current creates a wildly fluctuating and potentially dangerous electromagnetic field that not only radiates into the immediate environment but also can back up along home or office wiring all the way to the utility, infecting every energy customer in between. With Cohen's help, Milham entered the school after hours one day to take readings. Astonishingly, in some classrooms he found the surges of transient pollution exceeded his meter's ability to gauge them. His preliminary findings prompted the teachers to file a complaint with the Occupational Safety and Health Administration, which in turn ordered a full investigation by the California Department of Health Care Services.

The final analysis, reported by Milham and his colleague, L. Lloyd Morgan, in 2008 in the *American Journal of Industrial Medicine*: Cumulative exposure to transients in the school increased the likelihood a teacher would develop cancer by 64%. A single year of working in the building raised risk by 21%. The teachers' chances of developing melanoma, thyroid cancer, and uterine cancer

were particularly high, as great as 13 times the average. Although not included in the tabulations, the risks for young students were probably even greater.

"In the decades-long debate about whether EMFs are harmful," says Milham, "it looks like transients could be the smoking gun."

The Case against EMFs

Cancer and Electricity--could a disease whose cause has long eluded scientists be linked to perhaps the greatest practical discovery of the modern era? For 50 years, researchers who have tried to tie one to the other have been routinely dismissed by a variety of skeptics, from congressional investigators to powerful interest groups--most prominently electric utilities, cell phone manufacturers, and WiFi providers, which have repeatedly cited their own data showing the linkage to be "weak and inconsistent." Recently, however, in addition to the stunning new investigations into dirty electricity (which we'll return to), several developments have highlighted the growing hazards of EMF pollution--and the crucial need to address them.

The Evidence showing harm is overwhelming.

In 2007, the Bioinitiative Working Group, an international collaboration of prestigious scientists and public health policy experts from the United States, Sweden, Denmark, Austria, and China, released a 650-page report citing more than 2,000 studies (many very recent) that detail the toxic effects of EMFs from all sources. Chronic exposure to even low-level radiation (like that from cell phones), the scientists concluded, can cause a variety of cancers, impair immunity, and contribute to Alzheimer's disease and dementia, heart disease, and many other ailments. "We now have a critical mass of evidence, and it gets stronger every day," says David Carpenter, MD, director of the Institute for Health and the Environment at the University at Albany and coauthor of the public-health chapters of the Bioinitiative report.

Fears about the hazards of cell phones seem justified.

"Every single study of brain tumors that looks at 10 or more years of use shows an increased risk of brain cancer," says Cindy Sage, MA, coeditor of the report. A recent study from Sweden is particularly frightening, suggesting that if you started using a cell phone as a teen, you have a 5 times greater risk of brain cancer than those who started as an adult. The risk rises even more for people who use the phone on only one side of the head. While defenders of cell phone safety claim no scientist can explain why EMFs may be harmful in humans, **a body of reliable and consistent animal research shows that electromagnetic fields, equal to those generated by mobile phones, open the blood-brain barrier, causing blood vessels to leak fluid into the brain and damage neurons.** Ironically, that research (by renowned Swedish neuro-oncologist Leif G. Salford, MD, PhD) began with the goal of finding a way to deliver chemotherapy to brain tumors.

Other countries are revising exposure standards.

Members of the European Union, which has led the way on EMF investigations, are moving quickly to protect their citizens, particularly children and pregnant women. In the past 2 years alone, France, Germany, and England have dismantled wireless networks in schools and public libraries, and other countries are pressing to follow suit. Israel has banned the placement of cellular antennae on residences, and Russian officials have advised against cell phone use for children under 18.

Electrical hypersensitivity (EHS) is becoming more widespread.

Symptoms of EHS, a recently identified condition, include fatigue, facial irritation (resembling rosacea), tinnitus, dizziness, and digestive disturbances, which occur after exposure to visual display units, mobile phones, WiFi equipment, and commonplace appliances. Experts say up to 3% of all people are clinically hypersensitive, as many as one-third of us to a lesser degree.

Electrical pollution is increasing dramatically.

"For the first time in our evolutionary history, we have generated an entire secondary, virtual, densely complex environment--an electromagnetic soup--that essentially overlaps the human nervous system," says Michael Persinger, PhD, a neuroscientist at Laurentian University who has studied the effects of EMFs on cancer cells. And it appears that, more than a century after Thomas Edison switched on his first lightbulb, the health consequences of that continual overlap are just now beginning to be documented.

A History of Harmful Effects

Until Edison's harnessing of electricity, humans' only sources of EMF exposure were the earth's static magnetic field (which causes a compass needle to point north) and cosmic rays from the sun and outer space; over our long evolution, we've adapted to solar EMFs by developing protective pigment. "But we have no protection against other EMF frequencies," says Andrew Marino, PhD, JD, a pioneer in bioelectromagnetics who has done extensive EMF research and a professor in the department of orthopedic surgery at the Louisiana State Health Sciences Center. "How quickly can we adapt our biology to these new exposures? It's the most important environmental health question--and problem--of the 21st century."

Research into the hazards of EMFs has been extensive, controversial--and, at least at the outset, animated by political intrigue. A sampling:

- The Russians first noticed during World War II that radar operators (radar operates using radio frequency waves) often came down with symptoms we now attribute to electrical hypersensitivity syndrome. In the 1960s, during the height of the Cold War, they secretly bombarded the US embassy in Moscow with microwave radiation (a higher-frequency RF used to transmit wireless signals), sickening American employees. Radio wave sickness--also called microwave sickness-- is now a commonly accepted diagnosis.

- When television (also radio wave) was introduced in Australia in 1956, researchers there documented a rapid increase in cancers among people who lived near transmission towers.
- In the 1970s, Nancy Wertheimer, PhD, a Denver epidemiologist (since deceased), detected a spike in childhood leukemia (a rare disease) among kids who lived near electric power lines, prompting a rash of studies that arrived at similar conclusions.
- In the 1980s, investigators concluded that office workers with high exposure to EMFs from electronics had higher incidences of melanoma--a disease most often associated with sun exposure-- than outdoor workers.
- In 1998, researchers with the National Cancer Institute reported that childhood leukemia risks were "significantly elevated" in children whose mothers used electric blankets during pregnancy and in children who used hair dryers, video machines in arcades, and video games connected to TVs.
- Over the past few years, investigators have examined cancer clusters on Cape Cod, which has a huge US Air Force radar array called PAVE PAWS, and Nantucket, home to a powerful Loran- Cantenna. Counties in both areas have the highest incidences of all cancers in the entire state of Massachusetts.
- More recently, the new findings on transients--particularly those crawling along utility wiring--are causing some scientists to rethink that part of the EMF debate pertaining to the hazards of power lines. Could they have been focusing on the wrong part of the EMF spectrum?

Transients: The Post- Modern Carcinogen

Some earlier, notable--albeit aborted--research suggests this may be the case. In 1988, Hydro-Quebec, a Canadian electric utility, contracted researchers from McGill University to **study the health effects of power line EMFs on its employees.** Gilles Theriault, MD, DrPH, who led the research and was chair of the department of occupational health at the university, decided to **expand his focus to include high-frequency transients and found, even after controlling for smoking, that workers exposed to them had up to a 15-fold risk of developing lung cancer. After the results were published in the *American Journal of Epidemiology*, the utility decided to put an end to the study.**

That research commenced at a time when energy-efficient devices--the major generators of transients--were beginning to saturate North American homes and clutter up power lines. [Smart meters generate transients 24/7 because the 240-volt current from the power line must be stepped down to a fluctuating (pulsing) 3–10 volt current to run the meter.] A telltale sign of an energy-efficient device is the ballast, or transformer, that you see near the end of a power cord on a laptop computer, printer, or cell phone charger (although not all devices have them). When plugged in, it's warm to the touch, an indication that it's tamping down current and throwing off transient pollution. Two of the worst creators of transient radiation: light dimmer switches and

compact fluorescent lightbulbs (CFLs). Transients are created when current is repeatedly interrupted. A CFL, for instance, saves energy by turning itself on and off repeatedly, as many as 100,000 times per second.

So how does the human body respond to this pulsing radiation? "Think of a magnet," explains Dave Stetzer, an electrical engineer and power supply expert in Blair, WI. "Opposite charges attract, and like charges repel. When a transient is going positive, the negatively charged electrons in your body move toward that positive charge. When the transient flips to negative, the body's electrons are pushed back. Remember, these positive-negative shifts are occurring many thousands of times per second, so the electrons in your body are oscillating to that tune. Your body becomes charged up because you're basically coupled to the transient's electric field."

Keep in mind that all the cells in your body, whether islets in the pancreas awaiting a signal to manufacture insulin or white blood cells speeding to the site of an injury, use electricity--or "electron change"--to communicate with each other. By overlapping the body's signaling mechanisms, could transients interfere with the secretion of insulin, drown out the call-and-response of the immune system, and cause other physical havoc?

Some preliminary research implies the answer is yes. Over the past 3 years, Magda Havas, PhD, a researcher in the department of environmental and resource studies at Trent University in Ontario, has published several studies that suggest exposure to transients may elevate blood sugar levels among people with diabetes and prediabetes and that people with multiple sclerosis improve their balance and have fewer tremors after just a few days in a transient- free environment. Her work also shows that after schools installed filters to clean up transients, two-thirds of teachers reported improvement in symptoms that had been plaguing them, including headache, dry eye, facial flushing, asthma, skin irritation, and depression.

Transients are particularly insidious because they accumulate and strengthen, their frequency reaching into the dangerous RF range. Because they travel along home and utility wiring, your neighbor's energy choices will affect the electrical pollution in your house. In other words, a CFL illuminating a porch down the block can send nasty transients into your bedroom.

Something else is sending transients into your home: the earth. From your high school science texts, you know that electricity must travel along a complete circuit, always returning to its source (the utility) along a neutral wire. In the early 1990s, says Stetzer, as transients began overloading utility wiring, public service commissions in many states told utilities to drive neutral rods into the ground on every existing pole and every new one they erected. "Today, more than 70% of all current going out on the wires returns to substations via the earth," says Stetzer--encountering along the way all sorts of subterranean conductors, such as water, sewer, and natural-gas pipes, that ferry even more electrical pollution into your home.

A Pragmatic Proposal

Of course, these small studies--from Milham, Hydro-Quebec, and Havas-- hardly constitute a blanket indictment of transients. "We're still early in this part of the EMF story," says Carpenter. Does that mean as evidence of their harm accumulates, officials will raise a red flag? Not likely, if past EMF debates are any indication. Power companies have successfully beaten back attempts to modify exposure standards, and **the cell phone industry, which has funded at least 87% of the research on the subject,** has effectively resisted regulation. One good reason has had to do with latency--how long it takes to develop a particular cancer, often 25 years or more. Cell phones have been around only about that long.

But does that mean we avoid any discussion of their *possible* dangers? Again, if the past is a guide, the answer appears to be "probably." American scientists worried about the hazards of smoking, the DES (diethylstilbestrol) pill (given to pregnant women, it caused birth defects), asbestos, PCBs (polychlorinated biphenyls)--the list is lengthy--but officially warned about exposure only after they could say with absolute certainty that these things were harmful. As for protecting ourselves from toxic radiation, we have a lax--and laughable--history. In the 1920s, just a few years after medical imaging devices were invented, physicians were known to entertain their guests by x-raying them at garden parties. In the 1930s, scientists often kept radium in open trays on their desks. Shoe stores used x-ray machines in the 1940s to properly fit children's feet, and radioactive wristwatches with glowing hour hands were popular in the 1950s.

All of which means that, absent prudent safety standards from both public officials and manufacturers (adding a protective filter would add 5 cents to the cost of making a CFL and $5 to the cost of a laptop), you'll have to protect yourself from EMFs. Here's a reasonable proposition: Practice what is known in Europe as the precautionary principle, which is pretty much what it sounds like. Don't expose yourself unnecessarily to EMF hazards. Don't buy a home next to a WiFi tower. Get a corded telephone instead of a cordless one. Don't let your teenager sleep with a cell phone under her pillow. Don't use your laptop computer in your lap. Treat your EMF-emitting devices with the same cautious respect you do other invaluable modern devices, like your car, which is also dangerous--and can kill. You don't drive in an unnecessarily risky fashion--at high speed or while talking on a cell phone (right?).

The sad truth is that until we have more epidemiologic evidence--whether from disease clusters like the ones at La Quinta and on Cape Cod or from long-term analyses of the health of the world's 4-billion-and-growing cell phone users--we won't know definitively whether electrical pollution is harming us. And even then, we are unlikely to know why or how. "In this country, our research dollars are spent on finding ways to treat disease, not on what causes it--which is to say, how we can prevent it," says Marino. "And that's a tragedy."

But that's also another story.

The Opposing View: "No need for regulation"

In 1993, the National Institutes of health and Department of Energy began an extensive review of all studies on the possible health effects of electromagnetic fields. six years later they completed

their project, called the Electric and Magnetic Fields research and public Information Dissemination (EMF RAPID) program, and reported their findings to Congress: scientific evidence of human health risk from EMF exposure is "weak," they concluded.

While acknowledging a link between both childhood and adult leukemias and EMFs, the researchers' laboratory studies with cells and animals failed to identify a mechanism-- that is, how EMFs might cause cancer. (read the EMF RAPID report at prevention.com/links)

To longtime EMF investigators such as David Carpenter, MD, the NIH dismissal of EMF hazards was patently absurd then and even more so now, given the spate of new findings. "We don't know the mechanism for most carcinogens," he says. "There's this idea that anything that causes cancer must directly damage DNA, which is nonsense because most carcinogens don't directly damage DNA, and physicists are adamant that the energy in everyday EMF exposure is so low, it couldn't possibly do anything to biological systems. It's like saying the Earth is flat because you can't see over the edge."

In fact, biological impacts of EMFs--therapeutic ones--are well known. Low-level frequencies are commonly used to promote healing of wounds and bone fractures, and experimental studies show positive effects of pulsed EMFs in treating pain and depression. Recently, Michael Persinger, PhD, a cognitive neuroscientist at Laurentian University, found that pulsed magnetic fields also halted the growth of melanoma cells in mice.

In a neat twist of logic, many scientists believe that the more we document beneficial effects of EMFs, the better we'll understand their hazards. "If EMF at low intensities can heal," says environmental consultant Cindy sage, "then when we are constantly and randomly exposed to it from multiple sources, it may also be harmful, like any medicine used indiscriminately."

What was wrong with the La Quinta School?

According to epidemiologist Sam Milham, MD, the middle school was rife with the usual suspects--fluorescent lighting, electronic devices--whose toxic effects were exacerbated by an electrical supply overloaded with high-voltage transients.

Substandard wiring in the new school also undoubtedly played a role; officials have since added protective shielding to the electrical room. Milham also measured transient pollution along the transmission lines that fed power to the school. "I found it all the way from the substation to the school--more than a mile," Milham says. "There are three other buildings along the route that also serve children. I've reported it to the FCC and the utility, but they ignore the problem."

How electrical pollution harms

Here, a partial spectrum of the electromagnetic fields that surround us, from strong (waves of extremely high frequency and short length) to weak (waves of extremely low frequency and long length). In each category, you'll find sources that generate the EMF, and associated health risks from overexposure.

X-Ray [medical imaging devices] Used to diagnose illness	**RISK** Damages tissue and organs by breaking bonds
VISIBLE LIGHT [SUN] The only visible EMF	**RISK** Ultraviolet light can burn skin and cause cancer
MICROWAVE (a higher frequency RF) [CELL AND CORDLESS PHONES AND TOWERS] Can heat tissues and penetrate blood-brain barrier	**RISK** Increased risk of brain cancer, dementia, and heart disease
RADIO(RF) [RADIO AND TELEVISION SIGNALS] Can disrupt body's cellular interactions	**RISK** "Radio sickness" and electrical hypersensitivity syndrome
EXTREMELY LOW FREQUENCY (ELF) [POWER LINES] Can cause weak electric currents to flow through the body	**RISK** Exposure is associated with childhood leukemia

Read more: http://www.prevention.com/health/healthy-living/electromagnetic-fields-and-your-health#ixzz22iUSKV5z

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. Please state your name, address and contact information.

A. [redacted]

Q. **Was a smart meter installed at your residence?**

A. Yes.

Q. Did you offer to provide testimony in another proceeding about your experience with smart meters?

A. Yes. I have had serious health problems related to smart meters and I offered testimony in a Michigan Public Service Commission hearing (Case No U-17053) reviewing a proposed opt-out program for Detroit Edison Company's Advanced Metering Infrastructure. Unfortunately, the Commission would not accept any testimony about health and safety issues.

Q. Is the attached document marked as Exhibit A a true and accurate copy of the testimony that you offered to provide to the Michigan Public Service Commission?

A. Yes it is.

Q. Are the statements that you made in the attached Exhibit A still true and accurate?

A. Yes.

Q. Do you wish to add anything here not included in your statement in Exhibit A?

A. I had my home tested for EMF levels with a TriField meter, model 100XE. (I don't remember the exact date).

My home tested high EMF in many locations. Therefore, I hired an electrician who is knowledgeable about RF and EMF to make some changes in my electrical wiring in order to, hopefully, lessen the EMF levels.

Of course, I don't know what the EMF levels were prior to the meter change, but I had never experienced symptoms before, so something major changed when the meter was installed.

My home was built in 1962. I had my home inspected before purchasing it in 1987, and I have always hired reputable people for repairs or additions. It is a nice home, but it was not built with modern technology in mind. If the electrician found instances where EMF levels were raised in my home, I suspect there are many other homes where dirty electricity from these meters has elevated EMF levels.

The electrician spent a little over 2 days upgrading the wiring in my home. He said that more can be done, if needed: there are additional interventions that he could do which would involve working with a plumber. He suggested starting with the wiring. So, on Dec. 21-23, he made changes in the electrical wiring in my home.

I was away from my home immediately following the work by the electrician. I left for a trip on Dec. 23, 2012 and I just returned on Jan. 4, 2013.

ALL of my symptoms completely went away on my trip, in fact, within the first week of my trip.

On January 14, 2013, he did additional testing. Some of the high EMF readings had gone down. There are still some areas that test high, however.

It is still too soon to know how much, if at all, the recent changes in wiring have helped in alleviating my symptoms. What I noticed immediately upon returning home after being gone for three weeks, was that the ringing in my ears, though still an issue, was not as constant. So far, this intervention, like all the others, has helped at least to some degree. As I said, it is still too soon to know. It remains to be seen if my symptoms resurface after I have been home for a longer period of time.

I am planning to follow through with additional interventions to, hopefully, bring my home back to the level of comfort that I enjoyed prior to the meter installations.

I am grateful that I have had the resources to be able to spend a great deal of time away from my home since the meters were installed; and the resources to remediate at least some of the adverse effects of the smart meter installations. I'm sure there are others who are not as fortunate, who are forced to just live with the problem.

Q. Do you want to submit the statements in Exhibit A to the Maine Public Utility Commission for consideration in its pending proceeding to investigate the safety of smart meters?

A. Yes. I submit the attached testimony in support of complainants Ed Friedman, et al in their case before the Maine PUC as evidence that smart meters are not safe.

[redacted]

STATE OF MICHIGAN
WASHTENAW, ss

January 22, 2013

Personally appeared the above-named [redacted] and stated under oath that the foregoing Affidavit made by her is true and based upon her own personal knowledge, information or belief, and so far as upon information and belief, she believes the information to be true. Before me,

Andrea Taddie
Notary Public

Andrea Taddie
Name Typed or Printed

ANDREA TADDIE
Notary Public, Washtenaw County, MI
My Commission Expires Dec. 9, 2018

My Commission Expires: _____

[redacted]

EXHIBIT A

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application and request of the DETROIT EDISON COMPANY seeking approval and authority to implement its proposed Advanced Metering Infrastructure opt out program.	)))))	Case No U-17053

QUALIFICATIONS AND DIRECT TESTIMONY OF

[redacted]

Q. Do you swear that the testimony you are about to give is the truth, the whole truth, and nothing but the truth?

A. I do.

Q. Please state your name, address and contact information.

[redacted]

Q. On whose behalf are you testifying?

A. That of Intervenors Linda Kurtz and Cynthia Edwards.

Q. What are your qualifications to testify?

A. I take my electric service from Detroit Edison. My health has been extremely affected by the smart meter that was first on my home and the nontransmittingItron digital meter that is now on my home.

DIRECT TESTIMONY OF [redacted]

Q. What is the purpose of your testimony?

A. To provide information that establishes that there is a need for a no-fee opt-out and the need for an analog meter option. To provide information that may help the Commission in determining that smart and digital meters create certain kinds of economic, medical, social, or other harm or hardship, as outlined in Intervenor Linda Kurtz's Petition for Intervention, to some or all persons such that Detroit Edison and the Commission must not require those who are or who are likely to be so harmed to have a smart or digital meter placed on their home or place of business or to be otherwise deprived of rights and liberties, as outlined in Intervenor Kurtz's Petition for Intervention, by the deployment of the advanced metering infrastructure, smart meters, or digital meters, and, in the alternative, that such persons must be able to avoid such harm to their person and property without being charged a fee.

Q. How long have you lived at your current residence, and do you rent or own?

A. 25 years

Are you retired?

A. I am a retired.

Q. Before a smart meter was installed on your home, did you have problems with wireless technology?

A. No. Prior to the installation of my smart meter, I did not have any problems with wireless technology. I did not experience symptoms when using a cell phone; I did not experience symptoms when I used wireless internet or when I entered a facility that offered wireless internet; and I did not experience symptoms from the wireless technology that was already in my home, which, at the time of the smart meter installation, included a wireless water meter, and a cordless phone.

Q. Prior to the installation of a smart meter on your home, were you affected by other electrical devices?

A. No, not that I was aware of.

Q. When was a smart meter installed on your home?

A. A wireless smart meter was installed on my home on the morning of Saturday, March 10, 2012, while I was not home.

Q. Did you know the meter was going to be installed?

A. Yes. A few weeks before the installation, I had received a notice from DTE that a new, upgraded, wireless meter would be installed on my home. When I got the notice, I called DTE indicating that I would rather not have the wireless meter. I was told that I had no choice. Although I would have preferred not to get it, I was not anticipating a problem with it either. It was a "preference"not to have it, as opposed to an aversion.

Q. You say you preferred not to get one, then tell us why you didn't want it.

A. As I said, it was just a preference. When I got my first cell phone, I read the manual, and it indicated that, for safety reasons, I should hold the cell phone about an inch from my head when using it. I believed the manufacturer's warnings which indicated there may be risks involved with this technology. I have used, and still use, lots of wireless devices. It's not that I worry about their effects and avoid them; it is more that I weigh the benefits, and I purchase the ones which I see as highly beneficial, I choose not to use the ones that are not. The meter did not fall into the "highly beneficial" category. I am concerned about the environment and I am already conscientious regarding my energy usage at home. I keep my thermostat lower and wear warm clothing in the winter, I turn down my heat at night and when I am gone, I don't often use air conditioning during the summer, I have replaced older appliances for newer, more efficient ones, My TV is very small and I rarely watch it, I turn off the lights I don't need. In weighing the proposed benefits a smart meter, it didn't seem like something I needed. However, when I called DTE, I was told I didn't have a choice. I didn't get upset or argue. I just accepted it. Had I had any idea what an impact it would have on my life, though, I would have protested immediately

Q. What happened when you returned home after the meter had been installed?

A. I returned home a little after 1 p.m.. There was a note on my door indicating the new meter had been installed. I didn't think much about it. Shortly after arriving at home, I went into my kitchen to prepare lunch. There are no words that can adequately describe what happened next. Here's my best effort:

As I stood at my kitchen sink (a stainless steel sink, opposite my refrigerator), I felt a very uncomfortable vibration, like a low-level electric current, going through my body; there was a buzzing sound in my head; and I experienced a jittery feeling in my body.

When I stepped away from the sink, the feeling lessened considerably, but was still noticeable, especially whenever I was in close proximity to the back wall of my home.

My first thought was, "That must be the new meter. This will take some getting used to." At that point, I wasn't upset and I didn't panic. I honestly thought that my body would just need some time to adjust to it, and then everything would be okay.

Later, a friend who is a physics professor explained that my extreme reaction may have been because radio waves were bouncing off the metal surfaces of the sink and/or the refrigerator. I don't know what caused it; I just know it was weird and extremely uncomfortable.

Q. So you weren't worried about the new meter?

A. No. not yet. I wasn't worried prior to the installation, and when I first had the reaction, I just thought it was something my body would adjust to. Looking back, of course, I think "How could I have been so stupid? Why didn't I leave my house immediately?" At the time, though, as strong as my initial reaction was, it didn't occur to me that exposure to a meter could cause problems, or have prolonged consequences. I assumed I'd get used to it and the weird feeling and buzzing in my

head would go away. It was seeing my blood pressure suddenly shoot up, that suggested to me that the meter was causing more than a "weird feeling." That's what triggered my concern.

Q. Had you heard of smart meters prior to having one installed on your home?

A. Yes and no. I was not aware of any controversy. I had seen an article that said energy companies were installing new meters; that in some locations, people were being forced to accept the meters whether they wanted them or not; and that it wasn't right. I tend to be more accepting of things, and because I considered the views of this person to be a little extreme, I hadn't taken the article seriously. I hadn't given it much thought, that is, until my personal experience with smart meters.

Q. What happened next, the day the meter was installed?

A. As the day progressed, I developed a dull headache and I had a hard time focusing and concentrating. I also became hoarse. At first, I didn't make a connection between these symptoms and the meter. I did later, though, when these symptoms persisted, and when they developed at home, but went away after being away from home for awhile.

That first day, in addition to the headache and lack of focus, by early evening, my blood pressure had gone up significantly. High blood pressure had not been an issue for me. I had had a blood pressure monitor, and for several years I had checked it occasionally. There had never been cause for concern.

Q. Why had you made the decision several years ago to check your blood pressure from time to time?

A. I care about my health. Checking it occasionally was a precautionary measure.

Why are you so sure that the smart meter influenced your blood pressure readings?

A. Quite by coincidence, I had taken lots of readings right before smart meter installation. I do Bikram Yoga almost every day. It is a 90 minute, rigorous series of 26 postures, that is done in a room that is 105 degrees. It is a good workout. A fellow classmate had mentioned health benefits she attributed to her yoga practice, lower blood pressure being one of them. As I said, I didn't have blood pressure issues, but I wondered what effect, if any, my yoga practice had on mine. I decided to do an experiment: My plan was to take my blood pressure three times a day: before class, after class, and a reading later in the day. It was because of this experiment that I noticed the immediate spike in my blood pressure.

Q. What were your blood pressure readings prior to the smart meter installation?

A. Exibit A is my record of blood pressure readings from March 1 through March 12. Prior to March 10 (installation day), the range in readings was 108/61 to 133/75. The average reading was 119/64.

Q: What were your readings the day of the installation?

A. Before yoga, my blood pressure was 118/72. After yoga, it was 125/72.

By 5:00 p.m. it was 150/90. Later, it was 157/86. I remember that right before going to bed that night it was 165/90, but I did not record that reading.

It was the rise in my blood pressure that triggered my concern. It made me aware that my body was being affected on more levels than I had realized. and that the weird feeling I was experiencing was not something to take lightly

Q. What did you do then?

A. That night, rather than sleep in my own bed, I slept in the upstairs bedroom furthest away from my smart meter. The next day, Sunday, March 11, I called a friend and I arranged to stay at her house. I slept at her house from Sunday until I left for a three-week trip to Brazil on March 18.

Q. The second night, you slept at a friend's house. Did you notice a difference when you slept at your friend's house?

A. I didn't experience the buzzing sound in my head at her house, and the next morning my blood pressure was down again. I slept better than I had at my own house, and I didn't wake up with a headache. The weird, jittery feeling I had when at home lessened, but was still noticeable.

Q. Did you return to your home?

A. Yes. I could not totally avoid being in my own home that week because, in addition to packing for my trip, I had many things I had to take care of before leaving. However, I stayed away from home as much as I could.

What happened when you were in your own home that week?

The weird, jittery feeling and difficulty focusing persisted; I had headaches. Also, my eyes hurt, I became hoarse, and I developed a dry cough. For the first time in my life, I started on blood pressure medicine.

Q. Did you call DTE?

A. Yes. Monday, March 12, the first business day after my meter was installed, I called DTE from home. I was told there was no way to opt out of a smart meter. I explained that the meter was making me sick and that I couldn't stay in my house. I said I wanted to be transferred to someone who could help me. The person I talked to said she could not transfer me to a supervisor, but that she would arrange for someone to call me back. I indicated again that it was very uncomfortable for me to be in my house, but that I would wait there for the call. I said it was an emergency, and that I needed to talk to someone as soon as possible. No one called back. I called again that day or the next, and got no response.

How were you feeling inside your home waiting for the call? The jittery feeling, the difficulty concentrating, and the buzzing in my head were worse. I was also upset that I was getting such a

run-around from DTE. I knew I was leaving the country in a few days. I had hoped that I'd be able to come back to a home with a normal, comfortable environment.

Q. Did DTE get back to you?

A. Not right away. When I had not heard back by Wednesday, March 14, two days after being told someone would call me back, I sent an email to DTE via their online complaint site. I was eventually told I was being referred to Elaine Curtis. I talked to Elaine on Friday, March 16.

Q. What did she tell you?

She said DTE would remove my meter if I could provide a letter from my doctor indicating my smart meter was making me ill.

Q. Had you seen a doctor?

A. Yes. I had seen my doctor earlier in the week, on Wednesday, March 14. At that time, of course, I had not yet talked with Elaine Curtis, so I did not know I would need a letter. Since it was Friday by the time learned about the need for a doctor's letter; and I was scheduled to leave for Brazil early on Sunday, I was unable to talk to her before I left. I called her office on Friday afternoon, and when I didn't reach her, I left a message.

I had contacted my doctor immediately; I had been concerned about all of my symptoms, but especially the high blood pressure readings. I wanted to get in to see someone before leaving on my trip. My appointment was on Wednesday, March 14. Following the appointment, I started taking a beta blocker, She said it should lower my blood pressure without making it go too low when I was away from smart meters. She was right, it did. It also helped relieve the persistent jittery feeling I was having. I continued to sleep at my friend's and spend as little time at home as I could.

You were gone for three weeks. How did you feel in Brazil?

A. I was fine in Brazil. I felt great and I slept very well. The headaches, the buzzing in my head, and the weird jittery feeling all went away and did not come back until I returned home.

Did your doctor write the letter?

A. Yes. In spite of the fact that communicating from Brazil proved to be a challenge because phone lines and access to email were not always available or consistently working, my doctor did send the letter to DTE. Six days prior to my returning home, I received an email from Elaine Curtis indicating that she had received the letter from my doctor, and that the meter would be removed. Dr. Kyle Morgan faxed her letter directly to DTE; DTE has the letter. I do not have a copy.

Q. Did DTE follow your doctor's instructions?

Not exactly. In addition to indicating the meter was making me ill, Dr. Morgan had specified an analog meter. DTE replaced my smart meter with a different digital meter, not an analog meter.

Elaine Curtis said that DTE no longer had a distributer for analog meters. From Brazil, I sent an email to DTE via the DTE complaint link.

The many typographical errors exist because, after losing power in the middle of writing my letter several times (and therefore, losing what I had written), I finally sent this one, errors and all.

DTE ignored both my request for an analog meter and my doctor's letter specifying the need for an analog meter. If DTE had wanted to install an analog meter, it would have been very easy to do so. Hundreds, even thousands of used analog meters, in good working condition, were available.

Q. Was the smart meter removed?

A. Yes, but it took awhile. Since I had received the email from Elaine Curtis on April 4th indicating that my meter would be replaced, and since I wasn't coming home until April 10th, I had hoped that my smart meter would be gone when I got home. As soon as I arrived home, I walked to the back of my house and checked. It hadn't been changed. I went back to stay at my friend's house, and I called Elaine Curtis immediately. I don't remember if I actually talked to her that day, or if I left a message and she called me back. When we talked, she thought that my smart meter had already been removed. She said she would check into it and get back to me. She did. When she called me back, she assured me it would be removed within a few days. It was. I don't remember what day it actually came off.

Q.Why did you request an analog meter?

A. I had not had any problems with the old analog meters; and, although I didn't understand the concept, I had heard the term "dirty electricity" associated with digital technology. At that point, I wanted my old, familiar, healthful home back.

Q. Did replacing the smart meter with a digital meter solve the health problems caused by the smart meter?

A. No. Although there was an improvement, the new digital meter did not solve the problem. My symptoms were not as severe as they had been with the smart meter, but the weird jittery feeling, the headaches, the buzzing sound in my head, the cough, memory problems, and the difficulty focusing—all came back, just to a lesser degree.

Q. What did you do?

A. I contacted Elaine Curtis again. She said she didn't think the new meter could cause problems, but that she would look into it. When she got back to me, she said that the new digital could not be the problem because it did not send a signal.

In the meantime, I had talked to my friend who teaches physics. She said that because radio frequencies travel long distances, my current problems might be caused by the RF from my neighbors' meters. She recommended putting up heavy duty tinfoil, shiny side toward the meters, where I suspected the RF might be entering my home. The tin foil would help shield my home, since radio waves are reflected by metal and shiny surfaces. She also explained that there are materials which diffuse radio frequencies.

Someone else said that the problem could be that the new digital meter was dumping dirty electricity into my home, and that could be causing the problem.

Q.What did you do then?

A. I did what I could to solve the problem:

My first intervention was to line my garage and cover an outside wall with heavy duty tin foil to shield my house from my neighbor's smart meter that was closest to my house, and where I felt it the most. That helped....a little. The buzzing in my head was definitely still there, but not quite as intense. The other symptoms remained.

Next, I lined the inside wall with tin foil that shares the wall with my meter, On top of that, I put 3 layers of absorbing material. After this intervention (and every other intervention), I waited awhile to see what, if any, effect it had on how I felt or on my symptoms.

Q.Did it help?

A. Yes. Although better, it was still difficult to be in my home.

Now that I was spending more time at home, other symptoms surfaced. I wasn't sleeping through the night: I'd wake up after three, four or five hours and not be able to go back to sleep. I'd feel tense, jittery. I became hoarse, and I developed a cough. After being home for about three weeks, I began to notice breathing problems: I would get out of breath just by going upstairs, and I had difficulty breathing in my Bikram Yoga Class when doing postures that I had done with ease prior to the smart meter installations. Also because of my yoga practice, I noticed a slight weakness on my left side, that had not been there earlier. I was not able to do some of the strength building postures I had done earlier.

The buzzing sound in my head would seem louder late at night and early in the morning, and I would always wake up with a headache and a buzzing sound in my head.

Q. Have the interventions you've done helped?

A. There is no question that each intervention has helped. The problem is that my home has never gone back to being what it was before: I still can't tolerate being in my home for more than a

week or two without experiencing very worrisome symptoms. At this point, I still have concerns regarding smart meter effects on my blood pressure; and I have even bigger concerns about my breathing and my lungs. If I am home for more than a week, I get out of breath when I go up stairs, or when it is humid outside, and in I am no longer able to do some of the Bikram Yoga breathing exercises and postures that I formerly did with ease. So far, all of these symptoms improve or go away entirely when I leave my home for an extended period of time. I can't keep searching for people and places to visit, and as more smart meters are installed, there will be fewer places I can go for relief.

Q.What else have you done to your home?

A. Since my first attempt at using tin foil as a shield had helped . . . a little. .. . I put up more. I put tin foil on some inside walls. I also put tin foil in my bathroom, and on the back wall of the bedroom that shares a wall with the meter.

I ordered material which is designed to absorb radio frequencies from lessemf.com/. I put three layers of that material over the tin foil lining the back wall of the bedroom closest to my digital meter. I also lined one of the walls in my bedroom with this material.
The RF absorbing material is black; not exactly my color I'd choose for my bedrooms.

Because I was still experiencing symptoms, a few months ago I ordered a Graham - Stetzer meter and filters. I had read that the EMF levels can be measured and reduced by adding the filters. Again, I did notice a difference with the filters in place, but not enough of a difference to keep me symptom free.

Last month, I covered the back wall of my home with tin foil. It looks awful, but it made a difference. Again, it helped, but it has not totally taken care of the problem. With each intervention, I have felt a little calmer and the symptoms seem a little less intense, but none of the interventions has totally solved my problems. As I mentioned, I am especially concerned about the breathing difficulties I experience after being in my home for awhile. My blood pressure remains a concern as well, although I have been getting normal readings without medication since my last intervention of putting tin foil on the entire back side of my home.

I tried to spend as much time out of my home as possible. I left whenever I could. I went on trips for one to three weeks. Some were planned; others were trips I took just to get away from my house. Some symptoms, such as coughing, would go away as soon as I left my home. Others would go away after being out of my home for a period of time. The amount of time required for it to go away, depended on the symptom.

q. **How long can you stay in your house before noticing symptoms?**

A. The length of time before I experience symptoms depends on the symptom: If I return home after being away for a week, I feel jittery and get a buzzing sound in my head immediately upon entering my home. Within a few hours of being home, my eyes may hurt and become dry, and I will become hoarse and develop a cough. Things like breathing problems and weakness on my left side surface after being home for a week or more.

Q. How are things now?

A. I'm still spending as much time as possible away from home. From March 10, 2012, when smart meters were installed in my neighborhood, to the present, the longest stretch of time I will have been at home at one time is 30 days. Usually I am home only a few weeks before leaving again. When I leave, I try to be away for one to three weeks.

So far, when I have spent time away from my home, my symptoms have all lessened or completely gone away. When I return, they return.

Although being in my home is more tolerable than it was, even with all that I had done, my health while in my home is still not back to what it had been prior to the smart meter installations

Q. Did these interventions help? Is the digital meter no longer a problem?

A. The interventions have helped, but all the problems remain. Whenever I return home, I immediately experience a buzzing sound in my head, I become hoarse, and I get a dry cough. My reactions are systemic: If I am at home for an extended period of time (a few weeks), additional symptoms surface:

- weakness on my left side,
- joint pain,
- chest pain,
- difficulty focusing,
- hot flashes,
- breathing problems,
- shortness of breath,
- skin things (a rash above my right eye; rough hardened skin on my knuckles)

my eyes hurt and become dry,

all my teeth on my upper left jaw ache.

Q. Did you make any more attempts at mitigation?

A. I had not shielded the back of my house, both because I didn't think I could get tinfoil to stay up, and because I knew it would look terrible. Finally, though, in October, out of desperation to make my home more livable, I lined the entire back of my house with tinfoil. It looks awful. Again, it has not totally taken care of the problem and it is only a temporary measure, but it helped. I still

haven't spent more than a few weeks in my home since this latest addition of tinfoil, but so far my sleep is more normal, the jittery feeling is not as intense, I don't feel as spacey. I am still getting hoarse, but less often, and my eyes hurt less. The weird, unsettled sensation in my body and the uncomfortable buzzing sound in my head persist.

With each intervention I have seen an improvement in my symptoms, but my house is in no way back to what it was before smart meters were installed in my neighborhood or the digital meter was installed on my home.. In addition, the tinfoil, besides being ugly, is a temporary solution that won't hold up over time.

Q. How do you know that it is the digital meter that is causing these health effects?

Although I know it seems unbelievable that a meter could trigger all these health effects, the meter was the only thing that has changed in my home environment. Furthermore, at least so far, all these problems go away when I leave my home: some go away immediately upon leaving; others go away in time. The symptoms return when I return.

Q. **So when you go to someone else's house that has a smart meter, do you have problems?**

A. Yes, to varying degrees. I always experience the buzzing sound and a jittery feeling. I may or may not experience other symptoms.

Q.When you go into public buildings that have smart meters, do you have problems?

A. Fortunately, most of the places I frequent do not have smart meters yet, so I can't answer this adequately. However, the spiritual center I attend has a smart meter and it is very uncomfortable to go there, so I have not been going.

Q. Have you been in any home besides your own that has a digital meter?

A. Yes. I have a friend who lives on Lake Tahoe. She remodeled her home several years ago, and has a digital meter. It is not a smart meter. I really don't know if it is the same as my meter. Her home is very deep, and the meter is way at the back. I couldn't sleep when I stayed in a back bedroom. I was able to sleep when I slept on her sofa, in the front of the house. The weather was great when I was there, and we spent most of our time outside hiking or by the water. I didn't have as much trouble there as I do at my own home. Her meter is older; I don't know if it is like mine.

Q. In your experience, will the nontransmitting digital meter (the kind now on your home and the kind DTE is proposing as the alternative to the smart meter) solve the health problems you experience with smart meters?

A. No.

Are the nontransmitting digital meters an acceptable alternative to the smart meter?

A. **No**

Please list all the health effects you experience from smart and nontransmitting digital meters, whether on your own home or elsewhere.

buzzing in my head
Elevated blood pressure
Muscle weakness, especially on my left side
headaches
cramps in legs and feet, extremely cold feet
eyes hurt, blurry vision
breathing problems, shortness of breath
joint pain, arthritis like symptoms
chest pain
concentration and memory problems
All of my teeth on one side aching

Q. How do you know that it was the smart meter that first caused these health effects and not something else?

A. The symptoms surface when I spend time at home. They go away when I leave. They surface when I am home again. I don't know if the symptoms are caused by my digital meter or my neighbors' smart meters, but the installation of smart meters in my neighborhood is the only thing that has changed in my environment.

Q.Please list all the health effects you currently experience from the digital meter on your home.

A. Without the remediation or if I am around other people's smart meters, I sometimes experience all of them, especially buzzing in my head.
With the mitigation, I still experience buzzing in my ears and a I am not as calm, I'm more agitated. To date, I haven't stayed at home long enough to know if the other symptoms will surface again.

Q. Please list all the health effects you in the past experienced from the digital meter on your home but do not currently experience.

A. Since putting tin foil on the back of my home, my blood pressure has been normal without medicaiton as long as I avoid smart meters.

Q. Has anything else changed that would account for the subsiding of these effects?

A. No

Q. Did you experience any of the health problems you have enumerated prior to the installation of smart meters?

A. In 2007 I became ill after being exposed to a very toxic paint. The symptoms I did not experience were the buzzing in my head and the elevated blood pressure. I did experience the other symptoms. I recovered from that injury, and, until the smart meter was installed, I had not had experienced any of these symptoms since my recovery in 2008.

A.

Q. Did you have health problems prior to the installation of smart meters? If so, what were they and when did they begin?

A. Prior to the installation of my smart meter, I was healthy, I exercised regularly, I ate a good diet, and I was on no medication..

Q. Did you do anything else to deal with this problem?

A. Like I said, I put up shielding materials and I started spending as much time as possible away from home. I took several trips. Although some had been planned, I have taken others for the sole purpose of getting away from my house. From March 10, 2012, when my smart meter was installed, to present, the longest stretch of time I will have been home at one stretch is 30 days. When I have spent time away from home, I have generally left for one to three weeks at a time. Each time I left, my symptoms went away within a day or two of being out of my house. I am still spending as much time away from my house as possible.

At this point, I have spent about $2000 in materials and devices to tolerate living in my home, and I still have only a temporary fix that doesn't completely solve the problem. And, DTE is proposing additional charges to opt out.

DTE could probably use my home as an example of a smart meter success story: Their records should show that my energy usage has gone down since smart meters were installed in my neighborhood. It's a good example of how misleading it can be to just look at one source of data. My "real" energy usage is up—considerably. I consumed a lot more energy when you consider:

- transportation to doctors,
- products purchased to remediate my home
- medications I will need that I would otherwise not have needed
- driving and flying to destinations in order to stay away from home
- utilities consumed at visiting destinations

These are not just monetary expenses for me. They involve energy expenditures that far outweigh any energy savings DTE might claim.

My home no longer feels like "home." The number of places I can go and remain symptom-free is dwindling as Ann Arbor, the rest of Michigan, and the rest of the country is being installed. I would sell my house and move, but, at this point, I don't know where I could go.

Q. Please list all of the health problems you currently experience from the digital meter on your home?

A. Since my last mitigation, my most common symptoms are buzzing in my head, jitteriness, and breathing problems. The breathing problems are the ones that concern me the most.

Q. Do you experience problems when you enter homes or other buildings with smart meters?

Yes. I can tell immediately if there is a smart meter.

A. **Have the health effects you experience as a result of smart meters affected your ability to interact socially with others? If the answer is yes, describe how.**

A. Yes, of course. I am avoiding going places that have smart meters. It limits where I can go and who I spend time with.

Q. Have the health effects you experience as a result of smart meters affected your ability to access public services, such as the public library, government offices? If the answer is yes, describe how.

A. Not yet.

Q. Have the health effects you experience as a result of smart meters affected your ability to access religious or spiritual services? If the answer is yes, describe how.

A. I am involved with a meditation group. I have not been attending programs because I experience symptoms if I am in the building for an extended period of time.

Q. Have the health effects you experience as a result of smart meters affected your ability to freely access health services? If the answer is yes, describe how.

A. Not yet.

Q. Have the health effects you experience as a result of smart meters affected your ability to perform one or more major life activities not already mentioned? If the answer is yes, describe what activities and how the effects have affected your performance of these activities.

A. So far I have been lucky. Most of the places I frequent do not have smart meters yet. I am not looking forward to the day when smart meters are everywhere. It will be a nightmare for me.

Q. What do you feel is a reasonable accommodation to allow you to perform major activities of daily living?

A. A free opt out for everyone.
An analog meter option.
The Establishment of Smart Meter Free Zones and/or Facilities
The removal of smart meters everywhere.

TESTIMONY 3

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. Please state your name and address.

A. [redacted]

Q. Was a smart meter installed at your residence?

A. Yes. PG&E gas & electric smart meters were installed in January, 2010. Attached as Exhibit A is a photograph of the electric smart meter (Landis + Gyr) that was installed.

Q. Was the meter removed and replaced with an analog meter at your request?

A. In January, 2012, I called and wrote to PG&E, asking them to immediately remove and replace the smart meters that were making me so sick. The PG&E spokesman I reached on the phone read rather woodenly from some kind of prewritten script, repeating over and over again how "smart meters are harmless." I explained to him that I have a degree in physics from [redacted], and am well aware that many kinds of radiation that we currently don't have health standards or studies for are far from harmless, and that I was certain I am experiencing extremely negative effects from smart meters installed on my home. Eventually, this so-called "help" line staffer informed me that there was nothing I could do– there was no way (yet) to opt out.

A few weeks later, I attended and spoke at a public hearing of the California Public Utility Commission (CPUC) in San Francisco. Dozens of people spoke about how they, too, have been adversely affected by smart meters, and I was shocked to hear reports of people who have become so electro hypersensitive that they are living in their cars. Beginning in February 2012, California residents in Pacific Gas & Electric's territories could opt out, for an initial price and an on-going monthly extra charge. On February 8, 2012, the gas and electric smart meters on my home were replaced with analog meters.

Q. Are you paying the opt-out fees?

A. Yes.

Q. Please describe the symptoms and adverse reactions you have experienced.

A. I noticed I was having daily nosebleeds and migraine headaches in October 2011. In November, I got a welcome break from home and spent ten days in a smart-meter-free area in Maui. . . where all my symptoms cleared up and I felt fine. That's when I started wondering, "What's making me so sick at home?" When I looked up my symptoms and saw they matched "microwave sickness" very well, I began to suspect smart meters as the culprit at that point, and found information about people resisting the PG&E smart meter rollout in the San Francisco bay area.

I took no notice when smart meters were first attached to my house in January 2010, without notification by my utility, and without my express permission. I didn't notice that one by one, smart meters were being installed on homes to either side of mine, and all around my neighborhood. I didn't notice that slowly but surely, my entire city was being outfitted with smart meters... until one day in October 2011 I wondered why I awoke each morning feeling dizzy, with nosebleeds, blurred vision, ringing in my ears, and migraine headaches. I wondered why when I was just sitting and watching TV or reading, my heart would often skip a beat, and bizarre muscle tremors would inexplicably spasm muscles on my face, arms, legs, and all over my body as if I'd just been given an invisible electric shock.

When I spent ten days away from my home and away from smart meters in Maui, I was amazed at how much better I felt. Gone were all the symptoms which I'd been thinking might have been signs of sudden aging. When I returned home, all the aforementioned symptoms returned, and I wondered what could be causing them. In January 2012, a couple of months later, I caught strep throat and felt sicker than I'd ever been in my life. Unable to feel comfortable anywhere in the house, due to feelings of pain in my head, eyes, ears, heart, and all over my body I slept on the living room floor, and turned my full attention to the question of what, exactly, was making me feel so terribly sick.

When I looked up my symptoms, I was amazed to find that many of them matched what used to be known as "microwave sickness." The first scientific report of microwave sickness appeared in 1974, with symptoms including: fatigue, headaches, palpitations, insomnia, skin symptoms, impotence and altered blood pressure. In cases of extreme exposure, symptoms also included: warming sensations, nausea, neuropathy (numbness, tingling, even paralysis in toes and fingers), stomach cramps, dyasthesia (a crushing sensation) and irritability. People in these studies had been accidentally exposed to microwave radiation, and no clear biological markers at that time were found, so these were not the kind of long-term studies that could establish safe exposure levels.

way that toxins are more easily carried into the brain.

With mounting questions from an increasingly concerned public wishing to know what is being installed in our homes, and interested in knowing what effects wireless smart meters have on ourselves, our children, our friends and our families, it's time we hold policy makers accountable for ensuring that a democratic, truly transparent decision-making process is taking place with respect to smart meters. The current *"Ready-Fire!-Aim"* approach to rolling-out wireless smart meters for the smart grid is negatively affecting human health and the environment.

Just as we recognized the proverbial "writing on the wall" with regard to technological wonders of their times: Agent Orange, Asbestos, CFCs, Diethylstilbestrol (DES), Dioxin, DDT, lead paint, and Thalidomide … it's time for us to stop, wait for results from current scientific studies, do a thorough job gathering all relevant wireless smart meter information, engage in open dialogue all involved communities, and take a careful look at what role we really want wireless smart meters to have in our world today. If smart meters are harming increasing numbers of people, we potentially have a huge ticking time bomb on our hands… one that is leaving few habitable places left on Earth for growing numbers of individuals who have less and less tolerance for modern day electrosmog.

Dated this 9th day of January, 2013.

[redacted]

STATE OF CALIFORNIA
ALAMEDA, ss:

January 09, 2013

Personally appeared the above-named [redacted], and stated under oath that the foregoing Affidavit made by her is true and based upon her own personal knowledge, information or belief, and so far as upon information and belief, she believes the information to be true. Before me,

COLLIN BECKER
COMM. # 1926751
NOTARY PUBLIC - CALIFORNIA
ALAMEDA COUNTY
My Comm. Exp. March 25, 2015

Notary Public/Attorney-at-Law
Collin Becker
Name Typed or Printed
My Commission Expires: March 25, 2015

EXHIBIT A

Silver Spring Networks
00H3500208A79A7D
FCC ID: OWS-NIC507 IC: 3975A-NIC507

FOCUS AXR-SD
FORM 1S CL200 240V 2W 60Hz TA -30 to +75°C
100612 22296
P GbE
SmartMeter

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. **Please state your name, address and contact information.**

A. My name is [redacted]

Q. **Was a smart meter installed at your residence?**

A. No.

Q. **Did you offer to provide testimony in another proceeding about your experience with smart meters?**

A. Yes. I have had serious health problems related to smart meters and to all types of digital meters (including smart meters and radio-off smart meters), and I offered testimony in a Michigan Public Service Commission hearing (Case No U-17053) reviewing a proposed opt-out program for Detroit Edison Company's Advanced Metering Infrastructure. I am an Intervenor in that case. This testimony was offered to show that an analog meter needed to be offered as a smart meter alternative. Unfortunately, the Commission struck this testimony, holding that the type of meter to be used in Detroit Edison's opt-out plan was not open to consideration and that, therefore, the health testimony was not relevant.

Q. **Is the attached document marked as Exhibit A a true and accurate copy of the testimony that you offered to provide to the Michigan Public Service Commission?**

A. Yes, it is.

Q. **Are the statements that you made in the attached Exhibit A still true and accurate?**

A. Yes.

Q. **Do you wish to add anything here not included in your statement in Exhibit A?**

A. Yes. Things took a turn for the worse when I spent a five days at my parents' in Arizona over Thanksgiving 2012. I have not slept well there for about a decade, but attributed it to the time

change. In 2001, I slept really well. The next year, I couldn't sleep. I just tossed and turned and finally, after a very long time, would sleep fitfully. I thought it must be the bed, and moved to a different bed. It didn't help, but I stayed in that bed. Every year since, I have slept poorly, and wondered about the bed and the time change and wondered why, even if I spent two weeks there, I could not adjust and sleep.

The last two years, I basically haven't slept at all while there. Turns out, my parents have a Turtle meter on their home. It doesn't transmit wirelessly, but over the power line. It's digital. That's been on the home since 2002, which is about when I began experiencing a lot of difficulty sleeping. In about October or early November of 2012, my father told me that they had a digital meter on their home, and that he thought it had been put on about 4 years ago. This was actually good news to me, because I thought, *Well, I don't feel anything at my parents.* Everywhere there is a smart meter, I can feel the meter immediately when I enter the building, so I had made the assumption that if I couldn't feel it, it wasn't a problem for me (or at least not an immediate problem; from what I had read, I knew that down the road it could potentially be a health problem). I was so glad, because I felt like if worst came to worst, I could move back to Arizona and live in the electric cooperative district (Trico) that includes my parents' home.

I spent five days there sleepless, again wondering why I could not sleep and wondering why I couldn't adjust to the time change. The last day I was there, my father told me that the meter on their home is a Turtle meter. That night, as I lay sleepless, it suddenly dawned on me: I couldn't sleep because they had a digital meter! But then the question was, Why was it even worse the last two years?

When I got back to Ann Arbor, I continued to talk to my parents about this. My mother reminded me that two years ago, they got wireless. (My parents live in a very rural part of

Arizona, so a strong wireless antenna is required.) Clearly, the addition of the wireless to the dirty electricity already generated by the Turtle meter made the problem even worse! The bedroom where I sleep is about 15 feet from the wireless antenna (I didn't know there was an antenna nor where it was located until I spoke with my mother this year about it). In 2011 (the year the wireless was installed), I was there for 11 days, and exhausted the entire time. My sleep was abominable, although I actually did sleep. This year, I essentially did not sleep. I lay awake the entire night, tossing and turning, managing to grab a small amount of unrestful sleep early in the morning. I would awake exhausted, and spent the entire vacation, just like the year before, feeling terrible and barely able to function, barely being able to even take a walk, unable to read or do much of anything. This year, I would get up, walk a tiny bit, lie down for an hour, walk home, then lie down outside and try to sleep.

Interestingly, when I went to the Tucson International Airport to go home, I couldn't even feel the wireless in the terminal.

The cumulative effect that exposure to EMFs creates became apparent to me on the plane ride home, and afterward in Ann Arbor. I was in the plane, tired, just looking out the window (we'd probably been flying for about an hour, maybe less) and suddenly I got a headache. I attributed to the wireless on the plane (though I hadn't experienced that on the way out). As I said, I was looking out the window, and we were passing over wind turbines. I didn't think much of it. The headache passed within about 10 minutes. I was reading, about an hour later, and suddenly got a headache again. I stopped reading in order to be with my headache, looked out the window, and lo and behold, we were passing over another wind farm! Unbelievable. The headache passed as we moved away from the farm. I didn't experience any more headaches on the plane.

My ears rang intensely for 3 days after I got home, a high-pitched, intense ringing unlike anything I'd experienced before. The ringing has never stopped, two months later, though it's decreased in intensity. My body buzzed for three days, something I again had never experienced.

Since my visit to my parents, my sensitivity has increased many-fold. I went to the [redacted] Medical Library at the University of [redacted] on December 2, 2012. I felt a crush of what I now call one of the various EMF feelings I experience. I had never felt that in that library before. In fact, now that Ann Arbor was almost entirely installed with smart meters, I considered the University of [redacted] one of the few possible places I might spend time, since the university has its own power plant and presumably wouldn't be getting smart meters. I spent 3.5 hours at the med library. I felt really good and wired and awake when I got home around 8 p.m. That night, just like at my parents', I was unable to sleep the entire night. The next day, I was in the room of my house reserved for my occupation when I felt an EMF sensation. I couldn't understand it. The next day, I felt it again. I used a meter that measure voltage transients, and found out that one outlet in the room, an outlet into which nothing has ever been plugged, was emitting a high amount of transients. I checked it again the next day—I wasn't feeling anything strange, and the meter showed a normal reading. Since then, I feel it off and on.

The list could go on and on. On December 8, I felt something strange in my body, and sensation I associate with smart meters, though brief, and that I'd felt recently a few times in my kitchen. I noticed my neighbor using their garage door opener. It is only this neighbor's garage door opener that bothers me. The fluorescent lights at the outdoor farmer's market bothered me, yet another place I now cannot spend time in. On the 14th, I went to a friend's house that does not have a smart meter, for a meeting. I could barely stand it. She has

fluorescents, halogens, dimmer switches. I asked her to turn some of them off. I still did not feel good, and some time later asked her if we could move to another room where I knew she had incandescent lights. I still did not feel good. Then she told me she had wireless. She's had wireless for some time, but this was the first time I could feel it. Then, we left the house. I was walking about five feet behind two people as one of them, about five feet from her car, when suddenly, wham!, something passed through my falx cerebri (the connective tissue membrane that separates the two lobes of the brain) and a millisecond later I heard her car door opener and heard the beep of it. Even this I was now sensitive to. As I said, the list goes on, and the passage of time has not improved things. Even my computer is problematic, and I feel strange sensations coming from it. If I stay away from buildings with smart meters, fluorescent lights, and my computer for a few days, I recover to some extent—that is, I can then interact, briefly, with these devices without feeling anything. In my living room, I have had a dimmer switch for 15 years, which I have always left turned up all the way because otherwise it bothered me. About a month ago, even that, turned up all the way, bothered me intensely, I kept the light off in my living room, illuminating the room by means of the lights from other rooms. I was finally able to put a regular switch on it a couple of days ago.

Everything I'd been told about increasing sensitivity is, sadly, coming true. I didn't think it would. I was not going to be that person. I was going to conquer this sensitivity.

I believe that the switched mode power supplies are as much of a problem as the RF. Non-analog meters may solve the problem for some people, who are only apparently sensitive to wireless, but they will not solve the problem for many of us. My experience at my parents' makes that clear, as does the sensitivity I have always had to fluorescents.

I also want to add that in the testimony I submitted in U-17053, I noted that I could no longer go inside my bank for banking purposes and switched to using an ATM. Since that

testimony was written, the bank installed new ATMs that have all sorts of lights around them. I can no longer use those ATMs. I have switched to using the night drop to deposit my checks, which is not always a good option because the money will not picked up until the following day and because I cannot check my balance except over the phone.

Q. Do you want to submit the statements in Exhibit A to the Maine Public Utility Commission for consideration in its pending proceeding to investigate the safety of smart meters?

A. Yes. I submit the attached sworn testimony in support of complainants Ed Friedman, et al in their case before the Maine PUC as evidence that smart meters are not safe.

[redacted]

STATE OF MICHIGAN
WASHTENAW, ss

January 28, 2013

Personally appeared the above-named [redacted], and stated under oath that the foregoing Affidavit made by her is true and based upon her own personal knowledge, information or belief, and so far as upon information and belief, she believes the information to be true. Before me,

Mary Geneva Rickard
Notary Public

MARY GENEVA RICKARD
Name Typed or Printed

My Commission Expires: FEB 12 2017

MARY GENEVA RICKARD
NOTARY PUBLIC, STATE OF MI
COUNTY OF LIVINGSTON
MY COMMISSION EXPIRES Feb 12, 2017
ACTING IN COUNTY OF WASHTENAW

EXHIBIT A

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application and request of the DETROIT EDISON COMPANY seeking approval and authority to implement its proposed Advanced Metering Infrastructure opt out program.	)))))	Case No U-17053

QUALIFICATIONS AND DIRECT TESTIMONY OF [redacted]

QUALIFICATIONS OF [redacted]

Q. Do you swear that the testimony you are about to give is the truth, the whole truth, and nothing but the truth?

A. I do.

Q. Please state your name, address and contact information.

A. My name is [redacted]

Q. On whose behalf are you testifying?

A. That of myself as Intervenor.

Q. What are your qualifications to testify?

A. I take my electric service from Detroit Edison. I have been affected by the smart meter installation in multiple ways: my health, my ability to earn an income, my ability to perform major activities of daily living as defined by the Americans with Disabilities Act, my ability to attend religious and spiritual services, my ability to access government services and health-care services. My health is negatively impacted by the nontransmitting digital meter Detroit Edison proposes as an alternative to the smart meter.

Q. What is the purpose of your testimony?

A. To provide information that establishes that there is a need for a no-fee opt-out and the need for an analog meter option. To provide information that may help the Commission in determining that smart and digital meters create certain kinds of economic, medical, social, or other harm or hardship, as outlined in Intervenor Linda Kurtz's Petition for Intervention, to some or all persons such that Detroit Edison and the Commission must not require those who are or who are likely to be so harmed to have a smart or digital meter placed on their home or place of business or to be otherwise deprived of rights and liberties, as outlined in Intervenor Kurtz's Petition for Intervention, by the deployment of the advanced metering infrastructure, smart meters, or digital meters, and, in the alternative, that such persons must be able to avoid such harm to their person and property without being charged a fee

Q. How long have you lived at your current residence?

A. I have lived in my home since 199. I own my home.

Q. What has your experience with smart meters been since your first encounter with them?

A. It has been terrible. There is the health aspect and then there is the social aspect.

Q. Tell us about the health aspect. What health effects have the smart meters had on you?

I will list them.

- Insomnia. If I am in a building with smart meters for more than about 15 minutes, I cannot sleep that night. Moreover, if I am in a building with smart meters for a half hour or more, or for short periods of time over several days, I am unable to sleep for several days.
- Heart palpitations. The same as with the insomnia, although I do not *always* experience the heart palpitations when exposed. However, when I do get them, they can go on for several days.
- Cognitive dysfunction. This is especially present when I am in a building that also has a lot of wireless in it already. I forget what I came to the store to get. If I am talking to someone, I cannot keep track of my thoughts. I have a thought, and then I cannot complete it. I want to think and I cannot. I forget words. It is like being old long before your time.
- Anxiety in my body. This isn't a mental anxiety—it is a physical feeling, *not* accompanied by anxious mental thoughts.
- Pressure in my head, as described above.
- Pressure in my body, as described above.
- Occasionally, headache or incipient migraine.
- Tinnitus, sometimes.

Inevitably, I get the insomnia. Inevitably, if in a building for more than 15–20 minutes, I get the cognitive dysfunction. Inevitably, if I am in a house for more than 5 minutes, I get the pressure and other weird sensations, as well as the agitation/anxiety in my body. If I am in a bigger building, it may take up to 10 minutes to feel these sensations, though it usually happens more quickly. And sometimes, especially if it's a house, I feel them the moment I cross the threshold.

I have sometimes been barely able to sleep for 3 days and have had heart palpitations for three days after being in a building with smart meters. My second encounter with smart meters occurred toward the end of June (June 22–23), when I was forced to be in buildings with smart meters for hours two days in a row. One of these encounters was at my doctor's office, again, where I did not know they had been installed. However, the moment I stepped over the threshold of the building, I could tell they were on the building. After the incident at my doctor's I had heart palpitations for the next three days.

On top of all this, I have now become more sensitive to all sorts of electrical and wireless devices. This did not happen immediately. But now, there is hardly a building in Ann Arbor without a smart meter, so in order to do anything, I must be exposed to them. I have to get groceries, I have to do other errands. I do them as quickly as I can, but I cannot do everything in under 10 minutes. About a month ago, I began to notice that I was bothered by things that had never bothered me—the cordless phones in my home; sometimes the headset from my cell phone (the EMF travels up the wires); fluorescent lights in buildings that don't have smart meters on them, wireless in the Michigan League. With the fluorescent lights, I will feel the same agitation in my body and a very strong desire to leave the store immediately.

The effect on me is much, much worse in a home than, usually, in a big building. I assume that that is because the walls in a home are much closer to me--thus all the currents are closer to me and have greater impact. Also, the smart meters are way, way closer in a home. In one friend's house, if I stood in her kitchen, the meter would be five feet away from me, and that is standing as far away from it as possible.

Q. How do you know it's smart meters that are affecting your health?

A. It's obvious. When I step over the threshold of a building, I know whether there's a smart meter on the building because I can feel it. I feel all these weird sensations, like I've described above. Then, I don't sleep that night. And/or I get heart palpitations. And/or the other symptoms I've listed. Buildings that I was once fine in, one day I step inside, and it feels terrible. And so I know the smart meters have been installed.

Moreover, nothing else in my life has changed. When I heard about smart meters, I was concerned, but very hopeful that they would not bother me, since my cell phone did not bother me.

Q. Did you have these problems before smart meter installation?

A. Before smart meter installation, I rarely experienced insomnia. Poor sleep, yes; insomnia—very rarely.

Heart palpitations—I had a strange feeling in my heart many years ago, different than what I feel now. It was as if my heart were beating very fast. It lasted for a few days and never came back. This was different than what happens with smart meters.

Now that smart meters are everywhere in Ann Arbor, I sometimes feel strange sensations in my heart even when I have not been in a building with smart meters for a day or two. The first time I got that feeling was after being in my doctor's office and the other buildings.

Cognitive dysfunction—occasionally, but rarely to the degree I experience with smart meters and certainly not a *sudden* change from clear-headed, incisive thinking to sudden cloudiness. I have mitochondrial dysfunction, so I have periods of fatigue, and sometimes that is associated with trouble completing a thought or finding the right word. But that is something that creeps up slowly—it doesn't happen nearly instantaneously. With smart meters, I step over the threshold of a building with smart meters and within a few minutes to ten or twenty minutes, my brain goes in and out of working, I lose thoughts, there are empty spaces in my thinking. Yesterday, I had to be in a building with smart meters, interviewing someone. I could feel the smart meter the moment I stepped over the threshold. I didn't in fact know whether this meter might be installed on this building, but I asked my interviewee. She said there was. I felt pressure like a vise around my head, and a weird vibration in my body. About 20 minutes into the interview, I was no longer able to think, to ask questions. With a lot of effort and time, I could make some headway, but only with some help from the person helping with the interview. I'd also like to add that this interviewee, like several other people I have interviewed who have positions of authority in the community—doctors, people with directorial or supervisory roles in government—have given an interview, then consulted with their attorneys and told me not to use their interviews. These are people who have been made sick by the smart meters and are also seeing the effects on the people they treat, provide services to, and/or supervise. They have been excited about providing information and being heard. Then, they consult an attorney and refuse to testify. Everyone is so afraid of DTE.

Pressure—no.

Bodily sensations of agitation—no.

Headaches or migraines—occasionally.

Tinnitus—I have had a very, very mild tinnitus at least since the age of 12, but not even enough to remark to the doctor about. However, with smart meters, I can have the kind of tinnitus that people normally describe: the buzzing isn't something so mildly in the background you barely notice it; it is front and center.

Q. When did you first notice that your health was affected by smart meters?

A. The first time I ever encountered a smart meter was sometime in June of 2012. Someone I knew peripherally invited me over to her house. I walked into the house, which was on Huron Street in Ann Arbor, and was nearly bowled over. It is really hard to describe the effects one feels from something like this because they are not sensations we experience in normal life and so we don't have good words for them. There was a way in which it was like being pressed upon from all sides, sort of like the pressure you feel when taking off really, really quickly in an airplane, the kind of pressure I imagine astronauts feel. That pressure was all over my body, though that particular type of pressure was probably slightly less in my head.

In my head, as I stood, and later sat, in that house, it felt like something would shoot in. Not like a shooting pain. It was wider than a pain, and it wasn't painful per se, though it was extremely unpleasant. It was as if what I can best describe as "empty rays" shooting through my head from time to time. Like two or three, and then it would stop for a while. It was really, really weird.

I found that my body was becoming agitated. It wasn't a mental agitation, per se, but an agitation of my body. It quickly became hard to think. I would lose my thoughts.

I can tell you more about what it was like, and this has been my experience in other houses with smart meters: It is like you are in the middle of a funnel cloud of electromagnetic current—you are encircled by these currents and can feel them. That is what is really weird about it. Then, on top of that feeling, these "empty rays" pass through your head from time to time. Like I said, these are wide, and sort of like a light beam in that they are kind-of empty inside. I know this sounds weird, but think of how science fiction writers describe things. This *is* science fiction. Science fiction writers have been incredible predictors of the developments of the future—and we are now living in some of that world.

Those "empty rays," when they pass through, it is like for a moment or two your thought processes stop. It is really weird, because it is so quick you know it's happening and yet you don't. If you have ever had general anesthesia administered, then you might have an inkling of what it is like. When they administer general anesthesia, you are fully present and then suddenly there is this huge blank space. When you get anesthesia, the blank space (the loss of consciousness) lasts for a long time—a half hour to several hours. With a smart meter, it is so brief. But it can happen repeatedly. And in that moment, you are blank. And aware a millisecond later that you *were* blank. It's very unsettling. You know it is happening—just like when you are coming out of anesthesia, or when they haven't administered enough—yet you can do nothing about it.

As I read more about the effects that smart meters can have on the human system, this experience made sense: It is interrupting the communication of the nerve cells in my central nervous system. As a biodynamic craniosacral therapist and a student of human anatomy and physiology, I learned, as we all did in school, that neurotransmission is an electrical and chemical phenomenon.

Q. You described being in a funnel cloud of electromagnetic radiation.

A. Yes. As time went on, it came to me that that is the best description, and, on my own, I figured out why. Later, as I did more reading, I found out that what I figured out on my own was exactly what any electrical engineer or electrician would tell you about what was happening. You see, in a home, you are surrounded by wires, encircled by them as they pass behind every wall. They are also often above you, in the ceiling, and below you, in the basement. And if you are in a house like that first house I was in, which was three stories, each tenant has their own electronic equipment on, pulling electricity through the house, and the funnel cloud is very, very high, much higher than in a ranch house. So in a multi-storied house, the effect—at least this is my experience—is increased. You feel like you're are in a soup of vibration and also that that suddenly, out of nowhere, a current will shoot transversely through your body. I couldn't figure out why there were these multiple sensations--vibration and these currents or rays. But then I learned that the *magnetic* part of the electromagnetic field runs at right angles to the electrical field. So you have these currents encircling you as you sit in a room (and probably running above you and below you to a usually lesser degree) and *in addition* to that electrical field encircling you, you have the magnetic field running perpendicularly out to you. I wonder whether the "empty rays" I felt are those magnetic fields or whether they are the radiofrequency hot spots from intersecting smart meter RF waves.

Now, please understand that I learned all this terminology after my first encounter with smart meters. You know, this is the interesting thing about science. In science, we *observe* phenomena. Then we seek to explain it. Despite what is commonly taught as how the scientific method works, most science is actually done inductively, not deductively. Thus, we observe phenomena, we seek to explain it. We don't waltz in with a theory and attempt to prove it. Here, the phenomena are these extraordinary sensations in the body and other physiological phenomena: momentary lapses of consciousness, tinnitus, agitation, inability to think, and so on. When I first felt them, I had no idea what was going on. But I could feel the sensations. Thus, I could ask the question, "What is causing this?" And the simple, but in some ways not terrifically informative answer is, "Smart meters." But *how* do they cause it? And that is where an understanding of how the currents work—the electric *and* the magnetic fields—comes in. Once you understand that, the seemingly crazy becomes explicable. Like gravity. None of us can see it, but all of us can feel it. And it exerts a powerful yet invisible force on our bodies.

That is part of why this sensitivity to EMF is so hard to grasp. You can't see electric fields. You can't see magnetic fields, either, though you can see how the magnetic fields operate if you get a magnet and some iron filings. It's so hard for anyone to believe that something you cannot see is wreaking havoc with your ability to think and sleep and your heart to function properly. I completely understand. I am very sensitive to these fields, but not as sensitive as some people I know, and when they say that they can feel something, for instance, effects from a cell phone tower, I feel a lot of skepticism. It's human nature to mistrust someone else's experience when we've never felt it. So I understand why people who can't feel it are skeptical

But remember this, we can't feel cancer, we can't feel the AIDS virus, we can't feel when we've swallowed a batch of E. coli, and most smokers don't feel bad when they smoke, yet *each one of those things is invisibly killing us.* We should have learned by now that just because we can't see it or

can't feel it doesn't mean it's not real. And just because we can't see or feel it doesn't mean it's safe! Someone who is contracting a sexually transmitted disease is probably feeling great while they are contracting it!

Q. Did you know there was a smart meter on the first house you encountered with a smart meter?

A. No, not when I went over there. Once I was in the house and felt all these terrific pressures and sensations, I asked if there was a smart meter on the house. I went outside and looked and saw *three* smart meters on the house. I had learned about smart meters a few weeks earlier. Someone I know peripherally had sent out an email talking about smart meters and how badly they were affecting her health. I didn't know if I would be affected, but I thought there was a chance. I didn't know what a smart meter looked like, but since these meters didn't look like my own meter and had a digital read-out, I assumed they were smart meters. Also, they had blue on them, which I later learned is characteristic of the Itron smart meters.

Q. Why did you think you might be affected?

In 2008, I was given a laptop computer. I was so excited. I would be able to do computer work outside or go to a coffee shop and cruise the Internet. I work out of my home, so to be able to go to a place where there were other people, or to be outside in nature, was important to me. Well, I went outside, turned the computer on (while holding it on my lap), and within a little bit of time began to feel a bit weird. By the time I'd been on that computer for a half hour, I was feeling strange, woozy, not able to think well. I persisted. "I'm not going to give in to this feeling," I thought.

Q. How did you know it was the laptop?

A. Well, it was pretty obvious. I turned it on, and in less than half an hour I felt ways I'd never felt before. I was so frustrated. I also knew why I was likely feeling this way. I'd had a client the month before, a young guy, college student, who had come to me for craniosacral therapy. He told me he couldn't use his computer, couldn't use his cell phone, couldn't even watch TV. At first, it was just that he couldn't use the computer, but then it was all these different electronic devices. He said it was called *electromagnetic sensitivity*. Since I'd just been in a study group with someone who'd mentioned learning about this type of thing, I had an inkling of what he was talking about and didn't think he was coming from out of left field. But not in a million years did I think I would have that problem! I thought it was sad for him.

Q. So how did you resolve the problem with your laptop?

A. I called the place I got the computer from. The guy told me how to shut the wireless off. I was so bummed! I did it. It was slightly better, but still impossible for me to use this $1000 computer that could not be returned!

So, I talked to the guy again, and he told me to try taking the wireless card out. I did that, and I can use the computer just fine. And, in fact, the LED screen is a thousand times better than the CRT screen I had before, which would make me exhausted. This screen doesn't tire me out to the same

extent—less flicker, less dirty electricity, all that. Everyone knows CRTs are much harder on you, just like fluorescent lights.

Q. Do you experience problems with other wireless or electrical devices?

A. Some, but not all. Wireless in a room, at least before the installation of smart meters, was not a problem for me. Like many people, I went to coffee shops to work on my computer, and there is wireless at all of them. Perhaps I was affected in some kind of way (and from what I have now learned about the hidden, unfelt effects of RF radiation on the human body, I probably have been), but it was not anything I could directly feel.

Dimmer switches have always bothered me. I can hear the buzz if they are not turned all the way up, and they make me feel weird if they are not turned all the way up. I feel that agitation I described earlier.

Most CFLs I cannot stand, though certain ones I can tolerate.

Fluorescent lights exhaust me, like they do many people, if I am under them for a few hours, but, prior to the installation of smart meters, I could not *feel* anything from most of them. It's just that I would be fatigued after being around them.

My cell phone does not bother me, at least not now. We have measured the RF output from it, and it is extraordinarily low. It is an old phone by today's standards—a 2008 model. But I never put it to my ear—I use a headset and I often keep it shut off unless using it. Except for when I am walking, I do not carry it next to my body.

But here is the clincher. When I received the laptop, I also got a wireless router, of course. I never used it, never even opened the box because of that initial experience outside. But earlier this year, I needed a router. I called the computer store, and the guy told me I wouldn't have any problem with the router. I wasn't too sure about that, but he was, so I decided to try it. I plugged it into the wall and *immediately* I felt something happen to my heart. Unbelievably scary—like it was being penetrated by a current, by something that would twist it—right where the aorta enters the heart. I pulled the plug immediately.

Also highly relevant, when I walked into Best Buy a few years ago, I felt all sorts of strange sensations—a lot of things like I feel now with the smart meters. I couldn't really figure it out, but came to the conclusion that they must have added wireless throughout the store and that was what had changed. That made me a little concerned, because I knew that many coffee shops, at that time, were adding wireless, but I didn't have those sensations anywhere else. I figured that the amount and density of computer and stereo equipment in that store must be what made the difference. I now suspect that the switched-mode power supplies in the equipment, combined with extremely strong wireless, were what caused these feelings. I could barely stand to be in there, and from then on, I never went to Best Buy unless I absolutely had to buy something, and I got in and out as quickly as I could. But I didn't worry about it per se, I just figured it was Best Buy, since I didn't experience these things anywhere else.

Similarly, but to a lesser extent, when I went to Ace Hardware on Stadium Boulevard a couple of years ago, or maybe only a year ago, I noticed something different. I would get 15, maybe 20, feet away from the checkout counters, and I would feel strange and uncomfortable. Not the same way as in Best Buy, and certainly not as intense, but something along the same lines. I didn't like it at all. I was fine in the rest of the store. I noticed all the clerks were walking around with headsets. I figured it must be the wireless current. I didn't know much about that sort of thing then.

Oh, and once that happened, after a few months, the things you swipe your credit card through--in some stores--specifically, Whole Foods and Ace Hardware--those card readers started to bother me when I was close to them. There was this incredible intensity that came out of them. I think both Whole Foods and Ace changed their card readers, because at some point this year, they didn't bother me anymore. And note: I wasn't bothered at any other store, so clearly what is transmitted through some is not transmitted through others.

Finally, I have a new washing machine, bought in June. It's computerized. Every time I press the buttons, I feel jolts in my head. It's a quick click, as fast as the push of a button. This would have been unbelievable to me, but by the time I had this experience, I had read about voltage transients, so at least I knew what was going on. What I do in order to be able to use the machine is put the lid up to block the control panel. Then I bend down so I'm at the same level as the lid to keep the current from hitting me. I have to count the number of times to punch each button so that I can do it without seeing. Yeah, it sounds crazy, but it's true. And it makes sense, because the thick metal of the lid blocks most of the rays.

Q. You live near a cell phone tower. Does that bother you?

A. I live 1000 feet from a huge cell phone tower. When I first noticed it, quite a few years ago, I got worried, because I'd heard that they could be bad for your health, but I realized that nothing felt different to me. I was still sleeping okay, too. I think this is really important: The utilities tell us that smart meters aren't bad for us, yet I am terribly affected by them, can feel them throughout my body, they give me insomnia and heart palpitations, yet I can live next to a cell phone tower for years and not feel these strange sensations nor have these *palpable* health effects (it may be affecting my health, but I cannot *feel* it).

Q. Have the health effects you experience as a result of smart meters affected your ability to work and earn a living? If the answer is yes, describe how.

A. Yes. I work for myself as a [redacted] therapist and [redacted] therapist, and I [redacted] It affects my fatigue level and thus my competence and productivity; I cannot take a job outside the home; I cannot keep up my continuing education credits and thus my license.

When I have been unable to sleep because of smart meters, I cannot do [redacted] When I am unable to sleep because of smart meters, I am not as good a [redacted] as I can be. Furthermore, business this summer slowed considerably. I began to consider seeking work elsewhere, perhaps partnering with another health-care practitioner, and realized that with

the deployment of smart meters, this was an impossibility. There is absolutely no way that I can work in a building with smart meters. I can't be in a building with smart meters long enough to get a massage, let alone long enough to give them all day!

Because of the deployment of smart meters, I was unable to attend my biannual [redacted] therapy conference in Maryland. I was so looking forward to this educational and networking opportunity, especially because I am past president of the association and its current journal editor. But in early September, I found out that smart meters had been deployed in Maryland and I knew they were likely installed at the conference site. Which they were. Part of my compensation as journal editor is that my expenses to, from, and at the conference are paid for. I was unable to attend. I suspect that I will never be able to attend a conference again. Not only will I not receive this compensation that I am owed (at this point, the equivalent of $5000), my ability to earn an income is severely limited because I will not be able to keep up with developments in the field. BCST is a hands-on work. It is not a skill that can be learned from reading books or taking a course online.

Furthermore, I had begun taking workshops on Hellinger work, which is a type of therapy I can use as an adjunct in my work. Because smart meters have been deployed at the Ann Arbor location where these workshops are held, I can no longer learn this modality. Like BCST, it is a work that must be learned in in-person collaboration with others.

Moreover, each year, I attend the annual [redacted] therapy conference here in Ann Arbor. I also practice Polarity Therapy. The building where those workshops are held has also been smart metered, and I will never be able to attend the conference again. There is no way that I can spend 3 hours a day in a smart metered building, let alone 8 hours a day for 4 or 5 days.

I will be unable to keep my [redacted] therapy license because of this. To be completely clear: Michigan has passed [redacted] therapist licensing. No licenses have been issued yet, but as of November 2009, all [redacted] therapists who wish to be licensed must be getting continuing education credits. These credits include the modalities listed above, as well as [redacted] therapy courses, which I also attend. I can no longer get these credits.

So what am I to do? Stop practicing? Go on welfare? Flout the law and hope I don't get caught?

Q. Have the health effects you experience as a result of smart meters affected your ability to interact socially with others? If the answer is yes, describe how.

A. My social life has dwindled to nearly nothing. I am unable to be in the home of any friend because every friend has a smart meter on their home. I cannot meet a friend for dinner, go to a movie. I cannot date, because I can't go anywhere.

Earlier this year, I joined a number of great Meetup groups. These are social groups where people with similar interests get together weekly, monthly, perhaps a few times a week. I

was having a great time with the [redacted] Group, and others. I had to quit every one of those groups because of smart meter installation.

There is another group I belong to that meets in the winter and spring. I just realized that I am not going to be able to attend that group anymore. I am not going to be able to go to the annual Christmas party for the spiritual center I was a part of until the installation of smart meters made it impossible for me to attend functions at the center.

You know, I shop at a co-op, and I used to eat there, hang out there, work on my computer there. It's a social hub in Ann Arbor. I can be certain that I'll see someone I know at least every other time I go there. I can chat. Have a conversation. Catch up with people I wouldn't otherwise see. All that's over. I have to get in and get out, or I pay for it by not sleeping for the next one or two days.

Have the health effects you experience as a result of smart meters affected your ability to access public services, such as the public library, government offices? If the answer is yes, describe how.

Yes. I love going to the library, especially browsing the book sale. I was so grateful that I was still able to go to the library. Then, one day a couple months ago or so, I walked into the library and knew it had been smart metered. The cognitive dysfunction, the weird feelings in my body, incipient headaches. It wasn't quite as bad in the basement, where the book sales are held, but the last time I went there, it was really, really bad in the basement.

So now, I get in and get out. I can't browse. And libraries are for browsing.

If I wish to speak to my city council on any issue, including the smart meter issue, I have to weigh the ill effects on my health vs the possibility that my words will have an influence. I have attended council and environmental and Washtenaw County Commission meetings several times in the last year on a variety of issues, but if I do now, I will wind up not sleeping for one to two nights and experience the cognitive dysfunction, etc. I have already discussed..

Q. **Have the health effects you experience as a result of smart meters affected your ability to freely assemble outside? If the answer is yes, describe how.**

Yes. There are several places in Ann Arbor that I cannot tolerate being because of the incredibly high RF in those areas. This includes parts of Washington and Liberty Streets, where marches often take place.

Q. **Have the health effects you experience as a result of smart meters affected your ability to access religious or spiritual services? If the answer is yes, describe how.**

A. They have utterly affected it. I can no longer attend talks or services at the center I once went to. I want to explore several other religious/spiritual communities in Ann Arbor, and also attend talks, but now I cannot. If a friend dies, how will I attend their funeral? One friend died in April of this year. At least there were no smart meters then, and I could attend his wake.

The monthly spiritual group I am a part of can now meet only at my home or the home of one woman whose home has not yet been installed. Soon we will be able to meet only at my home. It was important to people to rotate the gatherings, but we will no longer be able to do that unless I drop out.

My spiritual life is very important to me, and an integral part of the work I do as a therapist. Yet one more avenue of self-realization, community, and education has been cut off from me due to smart meter installation.

Q. Have the health effects you experience as a result of smart meters affected your ability to freely access health services? If the answer is yes, describe how.

A. Yes. I told you about my experience at my doctor's. Recently, I needed to see my doctor again. I called the clinic and explained that I could *not* be in their building and wanted a referral to the specialist I needed to see. They refused, and said I had to come in. I waited out in my car, freezing, for one hour before they called me for my appointment (they were an hour late). Then, I had to be in that doctor's office, which is one of the worst buildings I have been in, for one hour for my appointment. I have pre-cancerous lesions on my face, hands, and legs. I had a choice: ignore them and potentially have them turn cancerous (I grew up in Arizona, and my sister has already had a malignant growth removed from her neck), or deal with the effects of the smart meters on my health.

I have visits to [redacted]'s Hospital in [redacted] once every three weeks for my Ehlers-Danlos. Once that building is smart metered, I don't know what I will do!

Q. Have the health effects you experience as a result of smart meters affected your ability to perform one or more major life activities not already mentioned? If the answer is yes, describe what activities and how the effects have affected your performance of these activities.

A. Yes.

Caring for myself. Going to the grocery store. Buying necessary clothing. Banking—once smart meters were installed at my bank (and I could feel it the moment I walked into the bank), I got an ATM card. I prefer to do all my banking with a person, not a machine, and had not had an ATM card for years, but got one the day I walked into the bank and could feel the smart meters. Getting my hair cut. Buying necessary materials for remodeling and maintaining my home.

Browsing a store.

Learning—both because I cannot attend the educational functions I need to and because of the cognitive dysfunction that inevitably occurs when exposed to smart meters for whatever reason. Furthermore, once I am exhausted and have insomnia because of smart meter exposure, I cannot think or learn.

Thinking—as described above.

Sleeping—as described above.

Interacting with others—as described above.

Reading—when exhausted, I cannot.

Concentrating—as described above.

Q. DTE has asked the Commission for approval of a plan that would not allow anyone to keep their analog meter. Instead, those choosing to opt out of smart meter installation, if an opt-out is instituted, will be forced to take a nontransmitting digital meter on their house. Have you had experience with the nontransmitting digital meter?

A. Yes.

Q. What was that experience like?

A. The nontransmitting digital meter makes me feel *horrible!* I was hopeful that when I went over to someone's house who had a digital meter that I would not be affected. I thought I *might* be, but I certainly did not expect what I encountered. I stepped over her threshold and my ears began ringing immediately. That is the first time that had ever happened to me. At that point, I had not experienced that with a smart meter. My body felt like it was buzzing. I could not stand to be in her house. It was every bit as awful as the smart meter. The only difference was, I did not feel those "empty rays." I left that house after about 7 minutes. I couldn't stand it.

I was over there briefly one other time. I felt the same awful sensations in my body.

I experience many of the same physiological changes (anxiety sensations, which are due to cortisol, etc.) as with a smart meter. I cannot say whether they digital meter will cause me insomnia because I have never stayed in a house with a nontransmitting digital meter long enough to know whether that's a problem.

Several weeks after my experience with the digital meter the first time, I was at that same home a second time, again briefly, and experienced the same sensations as well as a pressure through my body.

Q. In your experience, will the nontransmitting digital meter solve the health problems you experience with smart meters?

A. No.

Q. Are the nontransmitting digital meters an acceptable alternative to the smart meter?

A. No, because they will not solve the health problems I and others experience. It is very clear to me from my personal experience that smart meters and digital meters—at least the new, nontransmitting digital meters—cause many of the same health effects. I had no idea of this

when I began investigating smart meters. I thought the problems with smart meters were solely because of the RF (radiofrequency) radiation. It was months before I came across information about switched-mode power supplies and how they might also harm health. Switched mode power supplies step the 240 volts coming off the power line down to 4–10 volts to run the switched-mode power supply (SMPS). Analog meters don't need SMPS because analog meters don't need electricity to run.

The site I came across said *nothing* about how horrible the digital meters make you feel. They just cautioned that they might be harmful to health. It made you think about it in the same way you think about other things that we are cautioned are harmful to our health—you think, "Well, maybe it's a little bit harmful, but what isn't in this day in age?"

My experience in the house with the nontransmitting digital meter made it very clear to me that there is a lot of similarity between the smart meters and the new digital meter and that a huge portion of what I and others experience is due (at least in part, if not solely) to the voltage transients generated by the switched-mode power supplies.

I also want to emphasize very strongly that I have been in a house with an *old* digital meter, a digital meter that can't be converted to a smart meter. It was put on the house about 4 years ago. Being in that house is no different than being in my own home. The old digital meter is nothing like the new one. It is an entirely different experience!

Is there anything else you wish to say about how smart meters have affected your ability to perform major or minor activities of daily living?

Nothing except to say that smart meters have basically ruined my life. I have to live like a hermit, even though I am living in a city. I can't do any pleasurable thing anymore that involves anything outside of my home other than walking through the woods.

Moreover, with the near completion of smart meter installation in Ann Arbor in the last month—and therefore my inability to have a respite in any grocery store—I seem to have become more sensitive to every sort of electrical field. I am very afraid that I am going to become like that college student who came to see me—unable to use any sort of electrical product. At least he was still able to socialize with friends at their homes, a restaurant, a bar, go to church, spend time at the library. I can't even do that!

Q. What do you feel is a reasonable accommodation to allow you to perform major activities of daily living?

A. Well, it's very obvious. Smart meters must be banned, as must the digital meters that create these horrific voltage transients. It is amazing to me that all around the country, municipalities have been spending millions of dollars making every sidewalk in their jurisdiction conform to ADA requirements, *whether or not* any person with a mobility disability lives in that neighborhood. I am all for making things accessible. But the deployment of smart meters has made *every place—every building, every social setting, every home, some streets, every educational facility, every religious institution*—inaccessible to me.

Every person in a wheelchair can go to city hall, can get a special cart at the grocery store, can have a sign language interpreter present if need be, but I and others who are immediately and deeply impacted by the electromagnetic fields created by the installation of smart meters in every building in Michigan, are *barred* from every public space unless we make the choice to risk, in a very deep and real way, our health.

If they could find a way to do what they believe they need to do without impacting my health and that of millions of others, I would have no protest. I do not believe that smart meters are going to reduce energy consumption. Enough studies have shown that they've had no impact. But you know what, the government and private corporations misspend my money in numerous ways. I don't go to court over it; I don't spend every waking moment of my life fighting it. It's money. C'est la vie. But my health, my ability to sleep, to function, to earn a living, let alone visit with friends—that I must fight for. Because if a smart meter or a nontransmitting digital meter is installed on my home, I will—maybe quickly, maybe over the course of a year or two—die because of lack of sleep and the depression that results from such extreme fatigue.

The bare minimum that DTE and the MPSC must do is allow those of us who are so severely and immediately affected by smart and digital meters is to keep our analog meters so that we have at least some period of time in our lives where we are not surrounded by this electromagnetic funnel that so damages us. We must at least have some sort of haven in our homes.

The only way I am surviving right now is because my home does not have smart or nontransmitting digital meter on it.

Q. Did you have health problems prior to the installation of smart meters? If so, what were they and when did they begin?

A. Yes. Mitochondrial dysfunction (chronic fatigue), hyperthyroidism, and Ehlers-Danlos Type III hypermobility disorder. EDS is genetic (affects the connective tissue), hyperthyroidism was diagnosed around 2000 but was probably present years before, and mitochondrial dysfunction was definitively diagnosed in 2009 but has certainly been present since my later years in high school.

Q. If you had health problems prior to smart meter installation, have those conditions worsened, lessened, or stayed the same since installation?

A. *If* I am not exposed to smart meters, then there is no change. If I am exposed to smart meters, the fatigue is worse because I can't sleep. I do not know whether there has been a change in thyroid function as I have not had a thyroid test since installation.

I do not have a smart meter, nor a digital meter of any kind, on my home. If I did, I would likely be dead at this point, and I am not exaggerating when I say that. The sleeplessness and fatigue I experience when around smart meters for long render me incapable of doing anything. The depression that results from fatigue makes life seem meaningless—one has

no energy for life, no zest. The heart palpitations I experience would surely damage my heart so badly I would slowly die. The fatigue and cognitive dysfunction would make me incapable of earning any type of living, let alone taking care of myself and my home.

Q. Is there anything else you wish to say about how smart meters have affected your health or your life?

A. Yes. My heart feels weird a lot of the time now. I do not have smart or digital meter on my home, yet ever since that exposure in June at my doctor's, my heart has felt weird off and on. No matter where I go now, I am in the RF field from smart meters. Short of hiring someone or begging someone to do all my shopping, etc., I must be exposed to some extent to these meters.

The installation of these meters has devastated my social life. It is unbelievable and unconscionable that something that hurts so many people—I am not the only one—so tremendously has been allowed to be deployed in our society.

And I want to say that the digital meters DTE proposes to replace the smart meters affect me and others as badly in nearly every way as the smart meters. If that digital meter is put on my home, I will be as dead as I will be if a smart meter is installed.

DTE has its own reasons for installing these meters. What I astounds me is that their ignorance, myopia, greed, denial, or whatever it is, is apparently causing them to be *so* rigid, *so* uncompassionate, *so* unbending, and *so* uncaring that they would force people to put on their homes something that, quite literally, is going to kill some of us very quickly. Their grid is going to work whether or not a meter is installed on my home. It's working now, and at least 12 other people in my neighborhood have refused to let them install the smart meter. They've already ruined my life in many ways. The State of Michigan needs to ensure that even if I am forced to live like a hermit, I can still *live* in my own home rather than slowly die from fatigue and heart problems.

You know, after all the work I have done so far on this case, I want to go out on Friday and unwind with some friends. But I can't! Because there is a smart meter on every restaurant in the area! Don't you people get it! You have forced me, and others, to live like hermits. None of us wants to live this way! Until a couple months ago, I *didn't* live this way.

Lastly, I want to say that I know how to live with pain. I have to get injections in to my joints every three weeks for my Ehlers-Danlos Syndrome. I have done this with no anesthesia for years. My doctor has never, ever seen anyone else do it without medication. I can take pain. I can take hardship. I am not here because I am imagining something. I am not here because of fear. I am here because my body will not survive a smart or digital meter on my home. I am here because of the reality of what these meters do to my body.

TESTIMONY 4

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. Please state your name, address and occupation.

A. [redacted]

Q. Was a CMP smart meter installed at your residence? If so, state approximately the date when it was installed.

A. Yes, February 18th, 2011

Q. If a smart meter has not been installed, or if one was installed but removed and replaced by an analog meter at your request, please describe the circumstances of your request or complaint to CMP and their response.

A. I am currently in the process of requesting to opt out and have an older version analog meter installed. I called CMP Smart Meter office to request removal, they very nicely indicated they would do so, but they told me I should consider the low RF transmission as short bursts for less than a total of 1 minute in a 24hr period. (I found this hard to believe given the immense amount of scientific data indicating otherwise due to the long term health risks). They referred me to their web site for more detailed information on smart meters. They also advised that if I opted out, a $40 fee plus $12.00 monthly fee would be added to the bill each month.

Q. Please describe why you do not want a smart meter at your residence.

A. My health concerns are based upon both physical and medical conditions that I have. Since the meter has been installed, I have experienced a significant decline

in health.

Q. **Do you experience electromagnetic sensitivity symptoms in proximity to radio frequency devices, such as Wi-Fi, microwave ovens, cell phones, cordless phones, smart meters or other devices? Please describe the symptoms and the circumstances when they occur.**

A. Yes. I have headaches, fatigue and ringing in the ears if within a few feet of the smart meter for a duration of time, i.e. sitting in living room where meter is installed. Sensitivity to all wi-fi devices has developed since the smart meter was installed. At first in July in 2011, fibromyalgia, weakness and fatigue occurred, then in October and November 2011 face numbness, tingling occurred, followed by more advanced to acute reactions of burning of the head and face in April and May of 2012. The symptoms have continued to increase to headaches, anxiety, dizziness, nausea, weakness, muscle pain (widespread), joint pain and acute and sudden face, neck and chest burning along with the headaches when exposed to EMF conditions. Ringing in ears and aching teeth are more recent symptoms.

I am now at a hypersensitive condition and unable to work and make an income.

Q. **If you have physical or medical conditions, including sensitivity to electromagnetic radiation, have these conditions been diagnosed? Identify the diagnosis or description of the condition.**

A. Yes. I have sought out and located a few doctors knowledgeable in this area. All have diagnosed me with EMF Hypersensitivity, allergic reactions to electromagnetic radiation. And have recommended omitting the smart meter and

avoidance of wireless devices and EMF sources in the home. I am currently engaged in a medical treatment protocol for EMF patients.

Q. **Has your physician or other medical care provider made any recommendations about exposure to electromagnetic devices, including smart meters?**

A. Remove smart meter. Avoid and discontinue use of all wireless phones and devices. Avoid EMF sources in the home as much as possible.

12. **Has your experience with smart meters caused any disruptions in your daily living? Please describe the circumstances?**

A. My life has been profoundly impacted, I cannot work, need to avoid certain areas of my home, including where the smart meter is installed and the kitchen making meal preparation difficult. I cannot go to friends' homes with smart meters and wireless devices. I have to avoid rooms and situations with crowds where many cell phones may be present.

I cannot use a cell phone, be within a few feet of others using cell phones, a computer, cordless phone etc. No wireless routers have been installed at home, nor do I plan to install one. This has affected my income, my ability to pay for medical expenses and has created an uncertain future as to if we can remain in our home.

Q. **Please tell us anything else that you want us or the Public Utilities Commission to know about your experiences and circumstances.**

A. The use of smart meters and the harmful exposure to residents needs to be seriously reconsidered. Peoples' lives are being altered, their health at significant

risk. There has been enough research here in the U.S. and the health risks are well known and documented throughout Europe, to prove this is a problem.

Dated this 31 day of January, 2013.

[redacted]

STATE OF MAINE
CUMBERLAND, ss:

January 31, 2013

Personally appeared the above-named [redacted] and stated under oath that the foregoing Affidavit made by her is true and based upon her own personal knowledge, information or belief, and so far as upon information and belief, she believes the information to be true. Before me,

Notary Public/~~Attorney-at-Law~~
Susan L Swanson
Name Typed or Printed
My Commission Expires: 10/07/2018

TESTIMONY 5

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. Please state your name and address.

A. [redacted] (I am a tenant at this address;

[redacted] (I lived here for a year as owner and now am the landlord)

Q. Was a CMP smart meter installed at your residence? If so, state approximately the date when it was installed.

A. I moved to this rental on September 1, 2012. The smart meters were already installed. The meters are outside by living room, and are linked to my house and my landlord's house.

Q. If a smart meter was removed and replaced by an analog meter at your request, please describe the circumstances of your request or complaint to CMP and their response.

A. When I lived in [redacted], a smart meter was installed. I did not immediately notice an impact, but, slowly, over time. I realized I was feeling dizzy and more tired. I asked that the smart meter be removed. It wasn't clear to me when the smart meter would be removed. One day I walked into my home and I knew that was the day that CMP removed the meter. I could immediately feel more clarity and less restriction. I then went to look at the meter and confirmed that I was given an analog meter.

Q. If you do not currently have a smart meter, are you paying the opt-out fees?

A. I am paying the opt-out fees at my [redacted] property, but I am strongly opposed to these fees because I had a medical condition (head injury). Why should I pay for an accommodation?

Q. Please describe why you do not want a smart meter at your residence. Identify any health concerns you may have about smart meters and whether these concerns are based upon any specific physical or medical conditions that you or any of your family members may have.

A. I have a diagnosed brain injury and had to retire early because of this injury. I am very sensitive to EMF's, chemicals and other environmental factors. I cannot wear hats or sunglasses because they impact my cognitive focus and endurance. EMF has the same impact. I minimize environmental and chemical exposure because of my brain injury.

Q. Do you experience electromagnetic sensitivity symptoms in proximity to radio frequency devices, such as Wi-Fi, microwave ovens, cell phones, cordless phones, smart meters or other devices?

A. EMF creates cognitive fatigue, dizziness, physical fatigue, and inability to focus. Smart meters seem to impact my sleep and level of exhaustion more than a wireless device does. I can't explain why.

Q. If you have physical or medical conditions, including sensitivity to electromagnetic radiation, have these conditions been diagnosed? Identify the diagnosis or description of the condition.

A. Cognitive disorder NOS is official psych diagnosis. Toxic encephalitis is also a diagnosis.

Q. Has your physician or other medical care provider made any recommendations about exposure to electromagnetic devices, including smart meters? Please attach any recommendations in writing from your health care provider.

A. I have not sought medical support for this. I know what makes me sick. I am sure my neuropsychologist will provide a letter if needed.

Q. Has your experience with smart meters caused any disruptions in your daily living? Please describe the circumstances?

A. CMP representatives have been rude, uncaring, and inflexible. They have been giving the company line and are blaming the PUC.

Q. Please tell us anything else that you want us or the Public Utilities Commission to know about your experiences and circumstances.

A. The rental house I live in has two smart meters. I want them removed, but I would have to pay for both to be removed and then I have to pay the monthly opt-out fee for both meters. Given my medical condition, that I am on a fixed income, that I have a disability, I find it shameful that CMP is requiring me to pay for all these extra fees in order for them to make an accommodation. I have gotten into several discussions with CMP about this. They say this is the PUC's decision. I argued, unsuccessfully, that CMP had their own authority to waive the opt-out fee. They would not budge. I argued that for me to pay the extra fees associated with

the analog meter is like charging a person in a wheelchair to access a ramp to all public buildings. Why is it that CMP does not provide accommodations for people with medical conditions clearly impacted by the smart meters? This is about discrimination, arrogance and profit and not about what is doing right. I am living with a known impact, with two smart meters on my house, because I can't afford to pay all the extra fees. And how much profit is CMP making every year?

Dated this 11 day of January, 2013.

[redacted]

STATE OF MAINE
CUMBERLAND, ss: January 11, 2013

Personally appeared the above-named [redacted] and stated under oath that the foregoing Affidavit made by him is true and based upon his own personal knowledge, information or belief, and so far as upon information and belief, he believes the information to be true. Before me,

Notary Public/Attorney-at-Law

Michele Surry
Name Typed or Printed
My Commission Expires: 10-02-2018

TESTIMONY 6

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. Please state your name and address:

A. [redacted]

Q. Was a smart meter installed at your home?

A. Yes, four smart meters were supposedly installed in our 4-unit Victorian building sometime in July while we were traveling. We returned home on August 15, 2011, after two months of work and travel in Austria/Europe. We did not become aware of them until September 1, 2011.

Q. What was the make and model of the meters?

A. Landis+Gyr PG&E Smart Meter, Type: Focus AXR-SD

Q. At what frequency did the meters transmit?

A. 902-928 MHz ISM Band

Q. Did you experience any unusual symptoms after the meters were installed?

A. Immediately after our return on August 15, my wife and I started to experience headaches, disturbed sleep, fatigue, and tinnitus - I had a difficult time concentrating at work due to headaches and lack of sleep.

Q. Had you experienced these symptoms before the meter was installed?

A. I had never experienced these symptoms before in my life. Before August 15, 2011, I was in perfect health with no awareness or knowledge of electro-hypersensitivity (EHS) and/or radio-frequency sickness. We had no idea that electro-magnetic radiation (EMR) was so harmful to health or that Europe and Russia had much stricter regulations on EMR because of their past experience and science based standards. We lived a normal life with use of technology that is befitting of two accomplished professionals at 35 years of age (I have a master's degree in Civil & Environmental Engineering and work as a manager at a large Bay Area firm. My wife, [redacted] is a medical doctor). After receiving a

mailing earlier in the year from PG&E, we had put our [redacted] apartment on the smart meter delay list because we had heard negative reports (billing errors/privacy issues) from relatives, media and other California citizens with regard to this program, but we were not aware of the health issues.

Q. Do you believe your symptoms are caused by exposure to the smart meter?

A. Yes, there is no other explanation. Many physicians, scientists and biologists are increasingly stating that smart meters, the smart grid and wireless communications technology are a serious health concern (See Exhibits A and D). Not only is a growing portion of the population experiencing acute electro-hypersensitivity symptoms, there are hundreds of peer-reviewed studies showing significant long-term effects including cell damage, DNA chain breaks, immune and neurological system impairment, infertility and damage to the blood brain barrier (See Exhibit A-2).

Q. When did you first associate your symptoms to the meters and why do you believe they are caused by the meter?

A. I will answer these questions by summarizing the timeline of events as they occurred.

September 1, 2011: This was when we realized that smart meters had been installed in our building - a co-located bank of 4 smart meters were installed 10 feet directly below our bedroom. This was the only change to our living environment and our home that we had lived in for five years.

September 10, 2011: I spent 1-2 hours painting around the downstairs area in close proximity to where the smart meters were located. We did not realize that the pulsed electro-magnetic radiation emissions from the meters were so high (as we later learned from having them measured and filmed by a professional). There were no warning signs on any of the wireless smart meters. PG&E had stated that the meters only communicate wirelessly for 45 seconds each day. They did not say it was through high-intensity millisecond pulses that the smart meter bank produced every 2 - 8 seconds (essentially pulsing continuously). PG&E later admitted that their wireless smart meters transmit between 10,000 and 190,000 times per day (See Exhibit A-4).

September 10 - 30, 2011: The symptoms got considerably worse for both of us. The headaches, heart palpitations/arrhythmia, insomnia, fatigue and extreme tinnitus all increased in intensity. During this time we began to research smart

meters and realized that thousands of people across California were having the exact same symptoms. I also checked with our neighbors and some of them were having similar symptoms. We had nearly one dozen close friends in the San Francisco Bay Area who were experiencing the exact same health impacts - all since smart meters were installed at their homes.

Once we realized how dangerous these devices were, we immediately and repeatedly contacted PG&E to have them removed. They would not listen to us. They treated us very poorly. They even sent out people to test carbon-monoxide levels to see if that was the problem and a PG&E representative told one of our neighbors that pulsed electro-magnetic radiation is actually good for her brain (she slept 5 feet from the bank of smart meters, was pregnant at the time and quickly moved back to Sydney, Australia). After over one dozen calls from us, our neighbors and our landlord, PG&E essentially told us to go away and stopped returning our calls.

Q. Has your experience with smart meters caused disruptions in your daily living?

A. Yes. Work became difficult to do. Sleep was brought down from eight hours to three intermittent hours per night. Our marriage became strained because of the tension we were feeling in our own home. We started to feel hopeless and depressed - after having an incredibly positive and creative time in Austria and normally being very positive and productive people. We even put aside two businesses that we had started over the summer because of our health condition. It was as though a switch had been flipped. (A recent study explains the mechanism for this - see Exhibit E).

The symptoms got progressively worse. We gave notice on our apartment where we had lived for 5 years and had rent control (a substantial benefit in a booming [redacted]rental market where a comparable flat had almost doubled in price). We simply could not live in our home without experiencing debilitating health effects. Our safety was at stake both in our home and while driving – [redacted] noted that her memory and concentration while driving was not nearly what it had been two months prior and had deteriorated to the point where she did not feel safe. The effects of the smart meters were getting worse, so we started to look for a place outside of San Francisco. We looked in Mill Valley, CA and found a home near downtown. However, they had a smart meter and I realized for the first time that I got headaches when near a cell phone tower (there is one in downtown Mill Valley – just one block from the home). I had now become electro-hypersensitive and could not be near wireless communication equipment (Cell towers, smart phones, Wi-Fi and SmartMeters™). We realized that we had to

move to Fairfax, CA because it was one of the only communities without smart meters in our area. This was a burden, however, because it is over 2 hours by car from my place of employment in Silicon Valley. We had no choice as we had to give our bodies a chance to recover. Again, we were completely healthy just 2 months prior and the only new thing in our lives was the co-located bank of smart meters 10 feet from our bed.

From October 15 until November 22, 2011, we sublet a home in Fairfax. We had to keep our [redacted] apartment because we realized that finding a new rental in this market would take a long time (typically 3-4 months). We paid for two places at one time. While living in Fairfax our symptoms eased. We could sleep again. The heart palpitations decreased and the tension/anxiety/fatigue went away. However, the headaches continued. Any time I went downtown to Fairfax, the cell tower and wi-fi exacerbated the headaches. Every time I went into San Francisco or drove near a cell phone tower, the headaches would worsen. Using a cell phone became nearly impossible. I could only text, and sparingly at that. I would later meet other people experiencing the exact same phenomenon.

We experienced considerable stress while in Fairfax as well. We had essentially been uprooted by PG&E's smart meter program and were forced to seek refuge in a town that was not our home. In addition, it was very hard to find housing. Because of the housing/financial crisis, there are many more renters than there are places available. We did not know where we would live next. We were smart meter refugees. We met others who were also moving to Fairfax because they too were having health effects that they had attributed to smart meter installations.

Without a new place to live in Fairfax and our sublet ending, we were again under considerable stress. We tried to go back to our [redacted] home, but after only 15 minutes there our symptoms would reoccur. [redacted] would sit in the kitchen and watch her pulse go from 60 to 120 beats per minute spontaneously, which is a common symptom of electro-hypersensitivity (See Exhibit C-3). We could not even consider spending one night in our home. We had no idea where we would go next. Luckily, the day we had to leave Fairfax, a friend from San Francisco offered to sublet his home for a month while he traveled. He had a smart meter, but it was on the other side of the home. We could sleep at this home, but being back in San Francisco was not easy. Our electro-hypersensitivity (EHS) symptoms were worse in San Francisco. We learned that we had to unplug all Wi-Fi and cordless phones and we had to keep any cell phones around us on "airplane" mode or off. We felt like refugees and did not know where we would live next. We really felt hopeless as PG&E was not admitting that there was a problem. We also realized through research that thousands (possibly tens of thousands) of people throughout California were experiencing the exact same thing. Some were living in their cars in nature to seek relief. Many had abandoned their homes and careers

and now live off-the-grid in places like Big Sur or other states. Others had left the country. Lives were being destroyed and no help was on the way.

Q. Have you sought medical attention for your symptoms?

A. Between October 15 and November 22, 2011, we began to seek considerable health treatments. [redacted] is already a medical doctor and holistic physician. However, we needed the help of others and sought various therapies to help reduce our electro-hypersensitivity. We spent thousands of dollars during this month on alternative therapies because allopathic medicine does not know how to treat this condition, other than medicating the symptoms away, which actually makes things worse over time. These therapies provided some relief, but it was never long-lasting. We did feel like we were getting stronger while living in Fairfax. It seems the only known way to reduce electro-hypersensitivity once it occurs is avoidance of all wireless technology and high electrical fields. This is increasingly difficult in our world – especially now that utility companies want to put smart meters in every community in the state.

We contacted our Kaiser Permanente physician about our condition. He had heard from other Kaiser doctors that other patients were experiencing the same thing since smart meters were installed. He provided a letter for each of us to give to PG&E and the CPUC to have the smart meter bank removed from our building (Exhibit B).

Q. Did PG&E eventually remove the smart meter?

A. When we ran out of safe places to stay, we sent a package to the top executives at PG&E and each of the CPUC Commissioners demanding that they take the bank of smart meters out of our building within five days or we would hire a certified electrician to do this for us. Within 48 hours of the executives receiving this package, the smart meters were out of our building and safe analog meters were installed. The PG&E customer relations manager that called, Mark Torez, was very cordial and helpful. He called six or seven times within 24 hours of our initial conversation. I wondered why someone had not contacted us months prior when we contacted PG&E so many times about our issues with the smart meters. Mark and his superiors authorized the installation of the safe analog meters at our building, but would not admit that people were getting sick because of the smart meters (for obvious liability reasons). He stated that people go through phases in life and that apparently my wife and I were going through our "electro-sensitivity phase". The next day the smart meters came out.

Q. Did your symptoms subside after the meter was removed?

A. The effect of having the smart meters taken out was noticeable almost immediately. The home felt completely different. For the first time in 3 months, we were able to live and sleep in our own home. With the bank of four smart meters directly below our bedroom, this was not possible. Our tinnitus decreased somewhat and the heart palpitations/arrhythmia were not as frequent. The nervous system overload that we had been experiencing slowly started to diminish.

The damage had been done however. I am now electro-hypersensitive; a condition that I did not even know existed a few months prior (See Exhibits C and D-4).

Q. What are your current circumstances?

A. The electro-hypersensitivity issues persist. Being around wireless communications technology brings about headaches, fatigue and a lack of concentration and memory. I experience a tremendous pressure in my head that is very painful. It takes hours, sometimes days, for this head tension to decrease after I am exposed to wireless communication technology, strong electro-magnetic fields or a home or neighborhood with dirty electricity. Being sensitive to dirty electricity is a huge problem, as experts have shown it has increased on the power grid and on the wiring of homes with the deployment of smart meter/smart grid technology. We now use electricity sparingly in our apartment because it causes headaches. We only run our refrigerator when we are not at home and have to turn off the circuit breakers to our home at night.

My wife has moved back to Europe for now as she just did not feel well here. Her symptoms have reduced since leaving California, but moving has forced her to give up her practice in the Bay Area. My own condition has worsened. It is difficult for me to be in urban environments, in a normal office environment or even on certain computers because of the electro-hypersensitivity (wireless devices and computers are now very difficult to be around, which was not the case just one year ago). I have persistent headaches that only diminish when I am away from wireless technology and other electro-magnetic fields. This will likely affect my ability to earn income, the places that I can live and may completely change my life, as it has for many other affected people. I question whether these costs are factored into any smart meter program.

When I spend time in nature, away from all wireless communications equipment and electro-magnetic fields, my EHS symptoms, including headaches, completely disappear within 24-48 hours. However, they reappear almost immediately once I return to a populated area. I have also inadvertently done dozens of experiments

of my own where I would feel a microwave radiation source before seeing it. My personal experience, along with similar testimonials of many other affected people and a growing body of scientific evidence of biological harm from non-thermal microwave radiation is how I know that we are harming people with smart meter/ smart grid technology. The past 12 months have been extremely difficult for my wife and I. We have spent periods of time at approximately 15 different locations the past year, mostly searching for safe places to live. This has been very disruptive to our lives. We are currently living on separate continents, but are searching for a safe place to be together where we can both live and work.

I will add that it has been a considerable stress to us the past few months with regard to the opt-out process and fees. We have been in contact with our neighbors and the owner of our building. None of the residents are able to afford the opt-out fees ($75 plus $10/month), even though they are all supportive of not having smart meters in our building.

Dated this 3rd day of November, 2012

[redacted]

STATE OF CALIFORNIA
SAN FRANCISCO, ss:

November 3, 2012

Personally appeared the above-named [redacted], and stated under oath that the foregoing Affidavit made by him is true and based upon his own personal knowledge, information or belief, and so far as upon information and belief, he believes the information to be true. Before me,

ED ALLENDORF
Commission # 1944569
Notary Public - California
San Francisco County
My Comm. Expires Jul 17, 2015

Ed Allendorf
Notary Public/~~Attorney-at-Law~~
Ed Allendorf
Name Typed or Printed
My Commission Expires: July 17, 2015

[redacted]

EXHIBIT A

STATEMENT FROM 52 PHYSICIANS AND SCIENTISTS
CORRECTING MISINFORMATION RELATED TO
SMARTMETER™ PROGRAM

Smart Meters: Correcting the Gross Misinformation

| 11 juin 2012 |

http://maisonsaine.ca/smart-meters-correcting-the-gross-misinformation/

Quebec-based magazine La Maison du 21e siecle asked physician David O. Carpenter, former founding dean of the University at Albany (NY)'s School of Public Health, to comment an open letter published in the Montreal daily Le Devoir last May 24. This letter claimed wireless smart meters pose no risk to public health. More than fifty international experts contributed to the following rebuttal.

We, the undersigned are a group of scientists and health professionals who together have coauthored hundreds of peer-reviewed studies on the health effects of electromagnetic fields (EMFs). We wish to correct some of the gross misinformation found in the letter regarding wireless "smart" meters that was published in the Montreal daily *Le Devoir* on May 24. Submitted by a group Quebec engineers, physicists and chemists, the letter in question reflects an obvious lack of understanding of the science behind the health impacts of the radiofrequency (RF)/microwave EMFs emitted by these meters.

The statement that « Thousands of studies, both epidemiological and experimental in humans, show no increase in cancer cases as a result of exposure to radio waves of low intensity... » is false (1). In fact, only a few such studies — two dozen case-control studies of mobile phone use, certainly not thousands, have reported no elevations of cancer, and most were funded by the wireless industry. In addition, these reassuring studies contained significant experimental design flaws, mainly the fact that the populations followed were too small and were followed for a too short period of time.

Non industry-funded studies have clearly demonstrated a significant increase in cancer cases among individuals who have suffered from prolonged exposure to low-level microwaves, transmitted notably by radio antennas. The effects were best documented in meta-analyses that have been published and that include grouped results from several different studies: these analyses consistently showed an increased risk of brain cancer among regular users of a cell phone who have been exposed to microwaves for at least ten years.

Brain Cancer Rates

Furthermore, the argument that brain cancer rates do not indicate an overall increase in incidence is not evidence that cell phones are safe: the latency for brain cancer in adults after environmental exposure can be long, up to 20-30 years. Most North Americans haven't used cell phones extensively for that long. The evidence of the link between long-term cell phone use and brain cancer comes primarily from Northern Europe, where cell phones have been commonly used since the 1990s. Nevertheless, the most recent collection of primary brain tumors mined from pathology units in Australia showed brain cancer incidence rose by about 35% between 2000 and 2008 in the Australian Capital Territory and New South Wales (total population : more than 7 million).

Children are especially at risk. In May 2012, the U.K.'s Office of National Statistics reported a 50 percent increase in incidence of frontal and temporal lobe tumors in children between 1999 and 2009. This statistic is especially disturbing since in May 2011, after reviewing the published scientific literature regarding cancers affecting cell phone users, the International Agency for

Research on Cancer (IARC) classified radiofrequency radiation as a 2B, possible human carcinogen. Despite the absence of scientific consensus, the evidence is sufficiently compelling for any cautious parent to want to reduce their loved one's exposure to RF/microwave emissions as much as possible, as recommended by various countries such as Austria, Belgium, Germany,Russia and the United Kingdom.

Electrosensitivity

Public fears about wireless smart meters are well-founded. They are backed by various medical authorities such as those of the Santa Cruz County(California) Public Health Department. These authorities are worried about the growing number of citizens who say they have developed electrohypersensitivity (EHS), especially since for many of them, the symptoms developed after the installation of such meters (it takes some time for most people to link the two events).

Since the turn of the millennium, people are increasingly affected by ambient microwaves due to the growing popularity of wireless devices such as cell phones and Wi-Fi Internet. Therefore, the mass deployment of smart grids could expose large chunks of the general population to alarming risk scenarios without their consent. According to seven surveys done in six European countries between 2002 and 2004, about 10% of Europeans have become electrosensitive. The most famous person to publicly reveal her electrosensitivity is Gro Harlem Brundtland, formerly Prime Minister of Norway and retired Director of the World Health Organization (WHO).

While there is no consensus on the origins and mechanisms of EHS, many physicians and other specialists around the world have become aware that EHS symptoms (neurological dermatological, acoustical, etc.) seem to be triggered by exposure to EMF levels well below current international exposure limits, which are established solely on short-term thermal effects (2). Organizations such as the Austrian Medical Associationand the American Academy of Environmental Medicine have recognized that the ideal way to treat of EHS is to reduce EMF exposure.

Therefore, caution is warranted because the growing variety of RF/microwave emissions produced by many wireless devices such as smart meters have never been tested for their potential biological effects.

Well-known bioeffects

While the specific pathways to cancer are not fully understood, it is scientifically unacceptable to deny the weight of the evidence regarding the increase in cancer cases in humans that are exposed to high levels of RF/microwave radiation.

The statement that « there is no established mechanism by which a radio wave could induce an adverse effect on human tissue other than by heating » is incorrect, and reflects a lack of awareness and understanding of the scientific literature on the subject. In fact, more than a thousand studies done on low intensity, high frequency, non-ionizing radiation, going back at least fifty years, show that some biological mechanisms of effect do not involve heat. This radiation sends signals to living tissue that stimulate biochemical changes, which can generate various symptoms and may lead to diseases such as cancer.

Even though RF/microwaves don't have the energy to directly break chemical bonds, unlike ionizing radiation such as X-rays, there is scientific evidence that this energy can cause DNA damage indirectly leading to cancer by a combination of biological effects. Recent publications have documented the generation of free radicals, increased permeability of the blood brain barrier allowing potentially toxic chemicals to enter the brain, induction of genes, as well as altered electrical and metabolic activity in human brains upon application of cell phone RF/microwaves similar to those produced by smart meters.

These effects are cumulative and depend on many factors including RF/microwave levels, frequency, waveform, exposure time, biovariability between individuals and combination with other toxic agents. Clear evidence that these microwaves are indeed bioactive has been shown by the fact that low-intensity EMFs have proven clinically useful in some circumstances. Pulsed EMFs have long been used to successfully treat bone fractures that are resistant to other forms of therapy. More recently, frequency-specific, amplitude-modulated EMFs have been found useful to treat advanced carcinoma and chronic pain.

High frequency EMFs such as the microwaves used in cell phones, smart meters, Wi-Fi and cordless "DECT" phones, appear to be the most damaging when used commonly. Most of their biological effects, including symptoms of electrohypersensitivity, can be seen in the damage done to cellular membranes by theloss of structurally-important calcium ions. Prolonged exposure to these high frequencies may eventually lead to cellular malfunction and death.

Furthermore, malfunction of the parathyroid gland, located in the neck just inches from where one holds a cell phone, may actually cause electrohypersensitivity in some people by reducing the background level of calcium ions in the blood. RF/microwave radiation is also known to decrease the production of melatonin, which protects against cancer, and to promote the growth of existing cancer cells.

Early warning scientists attacked

In recommending that the Precautionary Principle be applied in EMF matters, the European Environment Agency's Director Jacqueline McGlade wrote in 2009: "We have noted from previous health hazard histories such as that of lead in petrol, and methyl mercury, that 'early warning' scientists frequently suffer from discrimination, from loss of research funds, and from unduly personal attacks on their scientific integrity. It would be surprising if this is not already a feature of the present EMF controversy... » Such unfortunate consequences have indeed occurred.

The statement in the *Le Devoir* letter that « if we consider that a debate should take place, it should focus exclusively on the effects of cell phones on health » is basically an acknowledgement that there is at least some reason to be concerned about cell phones. However, while the immediate exposure from a cell phone is of much greater intensity than the exposure from smart meters, cell phone use is temporary.

Smart meters

As Australian Associate Professor of neurosurgery Vini G. Khurana reports, adverse neurological effects have been reported in people who sustain close proximity to wireless meters, especially under 10 feet (3 metres).

A wireless smart meter produces radiofrequency microwave radiation with two antennas in approximately the same frequency range (900 MHz to 2.4 GHz) as a typical cell tower. But, depending on how close it is to occupied space within a home, a smart meter can cause much higher RF exposures than cell towers commonly do. If a smart meter is located on a common wall with a bedroom or kitchen rather than a garage wall, for example, the RF exposure can be the same as being within 200 to 600 feet distance of a cell tower with multiple carriers. With both cell towers and smart meters, the entire body is immersed by microwaves that go out in all directions, which increases the risk of overexposure to many sensitive organs such as the eyes and testicles. With a cell phone, people are exposed to microwaves primarily in the head and neck (unless using speaker mode), and only when they use their device.

Wireless smart meters typically produce atypical, relatively potent and very short pulsed RF/microwaves whose biological effects have never been fully tested. They emit these

millisecond-long RF bursts on average 9,600 times a day with a maximum of 190,000 daily transmissions and a peak level emission two and a half times higher than the stated safety signal, as the California utility Pacific Gas & Electric recognized before that State's Public Utilities Commission. Thus people in proximity to a smart meter are at risk of significantly greater aggregate of RF/microwave exposure than with a cell phone, not to mention the cumulative exposure received by people living near multiple meters mounted together, pole-mounted routers or utility collector meters using a third antenna to relay RF signals from 500 to 5,000 homes.

A technical study performed by Sage Associates in California indicates that RF levels from various scenarios depicting normal smart meter installation and operation may violate even the out-of-date US public safety standards which only consider acute thermal effects. This can happen when a person stands close to the meter to read the power consumption, or touches it, or shades the meter face with a hand to better read it. Emissions are also increased by reflective materials, such as stainless steel, other metals and mirrors, which can re-radiate stronger that the otherwise unaltered background. Microwaves are absorbed and dissipated by partially conductive materials, such as cement and special RF shielding paints and fabrics.

In addition to the erratic bursts of modulated microwaves emitted by wireless smart meters transferring usage data to electric, gas and water utilities, wireless as well as wired smart (powerline communication) meters are also a major source of "dirty electricity" (electrical interference of high frequency voltage transients typically of kilohertz frequencies). Some scientists, such as American epidemiologist Sam Milham, believe that many of the health complaints about smart meters may also be caused by dirty electricity generated by the « switching » power supply activating all smart meters. Since the installation of filters to reduce dirty electricity circulating on house wiring has been found to relieve symptoms of EHS in some people, this method should be considered among the priorities aimed at reducing potential adverse impacts. Indeed, the Salzburg State (Austria) Public Health Department confirms its concern about the potential public health risk when in coming years almost every electric wire and device will emit such transient electric fields in the kilohertz-range due to wired smart meters.

Rather be safe than sorry

The apparent adverse health effects noted with smart meter exposure are likely to be further exacerbated if smart appliances that use wireless communications become the norm and further increase unwarranted exposure.

To date, there have been few independent studies of the health effects of such sources of more continuous but lower intensity microwaves. However, we know after decades of studies of hazardous chemical substances, that chronic exposure to low concentrations of microwaves can cause equal or even greater harm than an acute exposure to high concentrations of the same microwaves.

This is why so many scientists and medical experts urgently recommend that measures following the Precautionary Principle be applied immediately — such as using wired meters — to reduce biologically inappropriate microwave exposure. We are not advocating the abolishment of RF technologies, only the use of common sense and the development and implementation of best practices in using these technologies in order to reduce exposure and risk of health hazards.

• David O. Carpenter, MD, Director, Institute for Health & the Environment, University at Albany, USA
• Franz Adlkofer, M.D., Chairman of the Pandora Foundation, Coordinator of the European Reflex Report onDNA-damage by cellphone radiation, Neuendorf, Germany
• M. S. H. Al Salameh, PhD, Professor of Electrical Engineering, University of Science & Technology, Irbid, Jordan
• Jennifer Armstrong, MD, Past President, American Society for Environmental Medicine, Founder, Ottawa Environmental Health Clinic, Ontario, Canada
• Pierre L. Auger, MD, Occupational medicine, Multiclinique des accidentés 1464, Montreal, Quebec, Canada
• Igor Belyaev, PhD, Head research scientist, Cancer Research Institute, Slovak Academy of Sciences, Bratislava, Slovak republic
• Fiorella Belpoggi, PhD, Director Cesare Maltoni Cancer Research Center, Ramazzini Institute, Bologna, Italy
• Dominique Belpomme, MD, Director of the European Cancer and Environment Research Institute, Brussels, Belgium
• Martin Blank, PhD, former President, Bioelectromagnetics Society, Special Lecturer, Department of Physiology and Cellular Biophysics, Columbia University Medical Center, New York, USA
• Barry Breger, MD, Centre d'intégration somatosophique (orthomolecular medicine), Montreal, Quebec
• Simona Carrubba, PhD, Prof. Biophysics, Daemen College, Amherst, NY, Associate Researcher, Neurology, Buffalo General Hospital , Buffalo, NY
• John Cline, MD, Professor, Institute for Functional Medicine, Federal Way, WA, USA, Medical Director, Cline Medical Centre, Nanaimo, BC, Canada
• Alvaro Augusto de Salles, PhD, Professor of Electrical Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil
• Christos Georgiou, Prof. Biochemistry, Biology Department, University of Patras, Greece
• Andrew Goldsworthy, PhD, Honorary lecturer in Biology, Imperial College, London, UK
• Claudio Gómez-Perretta, MD, Director, Centro de Investigación, Hospital Universitario LA Fe, Valencia, Spain
• Livio Giuliani, PhD, Senior Researcher, National Insurance Institute (INAIL), Chief of Radiation and Ultrasounds Research Unit, Rome, Italy
• Yury Grigoriev, PhD, Chair Russian National Committee on Non-Ionizing Radiation Protection, Moscow, Russia
• Settimio Grimaldi, PhD, Director, Institute of Translational Pharmacology (Neurobiology and molecular medicine), National Research Council, Rome, Italy
• Magda Havas, PhD, Centre for Health Studies, Trent University, Canada
• Lennart Hardell, MD, Professor of Oncology, University Hospital, Örebro, Sweden
• Denis L. Henshaw, PhD, Professor of Physics, Head of The Human Radiation Effects Group, University of Bristol, UK
• Ronald B. Herberman, MD, Chairman of Board, Environmental Health Trust, and Founding Director emeritus, University of Pittsburgh Cancer Institute, USA
• Donald Hillman, PhD, Dairy Science, Professor Emeritus, Department of Animal Science, Michigan State University, USA
• Isaac Jamieson, PhD, Environmental Science (electromagnetic phenomena in the built environment), independent architect, scientist and environmental consultant, Hertfordshire, UK
• Olle Johansson, PhD, Professor of Neuroscience (Experimental Dermatology Unit), Karolinska Institute, Stockholm, Sweden
• Yury Kronn, PhD, Soviet authority on physics of nonlinear vibrations and high frequency electromagnetic vibrations, founder of Energy Tools International, Oregon, USA

• Vini G. Khurana, MBBS, Associate of Professor of Neurosurgery, Australian National University, Australia
• Henry Lai, PhD, Professor of Bioengineering, University of Washington School of Medicine, Seattle, WA, USA
• Abraham R. Liboff, PhD, Professor Emeritus, Department of Physics, Oakland University, Rochester, Michigan, USA
• Don Maisch, PhD, Researcher on radiation exposure standards for telecommunications frequency, EMFacts Consultancy, Tasmania, Australia
• Erica Mallery-Blythe MD, Emergency Medicine Physician, England
• Andrew A. Marino, MD, Professor of Neurology, LSU Health Sciences Center, Shreveport, LA, USA
• Karl Maret, MD, President, Dove Health Alliance, Aptos, CA, USA
• Fiorenzo Marinelli, PhD, Researcher on biological effects of EMFs, Institute of Molecular Genetics, National Research Council, Bologna, Italy
• Andrew Michrowski, PhD, Director, Planetary Association for Clean Energy, Ottawa, Canada
• Sam Milham, MD, former chief epidemiologist, Washington State Department of Health, USA
• Joel M. Moskowitz, PhD, Director, Center for Family and Community Health, School of Public Health, University of California, Berkeley
• Gerd Oberfeld, MD, Public Health Department, Salzburg State Government, Austria
• Mike O'Carroll, PhD, Professor Emeritus (Applied Mathematics), University of Sunderland, UK
• Jerry L. Phillips, PhD, Director, Center for Excellence in Science, Department of Chemistry and Biochemistry, University of Colorado, USA
• John Podd, PhD, Professor of Psychology (experimental neuropsychology), Massey University, New-Zeland
• William J. Rea, MD, thoracic and cardiovascular surgeon, founder of the Environmental Health Center, Dallas, Tx, USA
• Elihu D. Richter, MD, Professor, Hebrew University-Hadassah School of Public Health and Community Medicine, Jerusalem, Israel
• Leif G. Salford, MD, Senior Professor of Neurosurgery, Lund University, Sweden
• Nesrin Seyhan, MD, Founder and Chair of Biophysics, Medical Faculty of Gazi University, Turkey
• Cyril W. Smith, PhD, lead author of "Electromagnetic Man", retired from Electronic and Electrical Engineering, University of Salford, UK
• Morando Soffritti, MD, Scientific Director of the European Foundation for Oncology and Environmental Sciences "B. Ramazzini" in Bologna, Italy
• Carlos Sosa, MD, surgeon affected by the Microwave syndrome, Medellin, Columbia
• Antoinette "Toni" Stein, PhD, Collaborative on Health and the Environment (CHE-EMF Working Group), Co-Coordinator, Berkeley, CA, USA
• Stanislaw Szmigielski, MD, PhD Professor of Pathophysiology, Consulting Expert, former director of Microwave Safety, Military Institute of Hygiene and Epidemiology, Warsaw, Poland
• Lauraine Vivian, PhD, Senior Lecturer, Primary Health Care Directorate, Faculty of Health Sciences, University of Cape Town, South Africa.
• Bradford S. Weeks, MD, Director, The Weeks Clinic, Clinton, WA, USA
• Stelios A. Zinelis, MD, Vice-President, Hellenic Cancer Society, Cefallonia, Greece

[redacted]

EXHIBIT B

LETTERS FROM PHYSICIANS

[redacted]

November 27, 2011

[redacted]

Dear Pacific Gas & Electric Company and California Public Utilities Commission:

My patient, [redacted], began suffering symptoms shortly after the installation of the wireless transmitting smart meters at his [redacted] residence.

The symptoms include headaches, insomnia, heart palpitations, tinnitus and an inability to concentrate fully. Prior to the installation of the wireless smart meters, [redacted] was a perfectly healthy 35-year-old individual. Over the past several months, his quality of life has deteriorated significantly and he reports that the only way to reduce his symptoms is to seek temporary residence in communities that have not implemented the smart meter technology. This has put considerable stress on [redacted] and his wife as they may be forced from their home, community and places of employment.

As the symptoms occurred soon after [redacted] was exposed to two banks of smart meters (approximately 10 devices) that are within 15 feet of his bedroom and the fact that many other California citizens are reporting similar conditions after the installation of their smart meters, I am of the opinion that smart meter technology cannot be ruled out as a potential cause for [redacted]'s health.

Because of this, if possible, I do not think it is unreasonable to honor this patient's request to remove the above mentioned smart meters and replace them with the non-transmitting analog meters to see if the patient symptomatically feels better.

Sincerely,

[redacted] MD

[redacted]

April 24, 2012

[redacted]

Dear Pacific Gas & Electric Company,

My patient, [redacted], has been complaining of electro-hypersensitivity symptoms since last September. The symptoms include headaches, trouble sleeping, heart palpitations, tinnitus and an inability to focus. He reports that the symptoms occurred shortly after the bank of smart meters were installed 10 feet from his bedroom in his San Francisco apartment building.

It is my understanding the smart meters were taken out of the building in January. Shortly after the meters were taken out, [redacted] and his wife were able to move back into their home and his symptoms began to subside. There was a noticeable reduction in headaches and he was again able to sleep adequately.

During the past three months [redacted] has had to spend time in different South Bay homes for work reasons. Each of these homes had smart meters and in all of the cases where the meter was located in the vicinity of his sleeping room, the headaches, tinnitus and sleep disturbances reoccurred. [redacted] reports that he has now become sensitive to wireless communication technology and can no longer use a cell phone, be near cell towers or use computer equipment that operate using wi-fi without getting a headache. Prior to September, 2011 he was able to use all of these technologies with no symptoms.

As my patient appears to be part of the 3-5% of Californians who have become sensitive to wireless technologies and the dirty electricity they create, I recommend that no smart meters be installed at his home. The analog meters are the safest technology for my patient.

Sincerely,

[redacted] MD

[redacted]

October 16th, 2012

To Whom It May Concern,

My patient [redacted] D.O.B. [redacted] has Electromagnetic Hypersensitivity also known as EMF sensitivity. This causes him to get a headache and/or difficulties concentrating and heart palpitations when exposed to electromagnetic radiation. Approximately 3% of the population of California has this illness now and the numbers are rising quickly. In Sweden this is now considered a disability.

I am writing to you today to request that you make some reasonable accommodations for [redacted] so that he may continue to work in his office setting without discomfort. These accommodations are:

1. [redacted] should not sit under fluorescent lights.
2. His work cubicle should be located as far away from the wire-less router as possible.
3. Computers should be modified to limit radiation exposure to decrease the frequency and severity of his symptoms.
4. A wired phone rather than a cordless phone should be used.
5. Exposure to Smart Meters should be avoided.

For more information please see the website "Citizens for Safe Technology"

Sincerely,

[redacted]

[redacted]

EXHIBIT C

EVIDENCE FOR ELECTRO-HYPERSENSITIVITY

Int J Neurosci. 2011 Dec;121(12):670-6. Epub 2011 Sep 6.

Electromagnetic hypersensitivity: evidence for a novel neurological syndrome.

McCarty DE, Carrubba S, Chesson AL, Frilot C, Gonzalez-Toledo E, Marino AA.

Department of Neurology, LSU Health Sciences Center, Shreveport, Louisiana 71130-3932, USA.

Abstract

OBJECTIVE: We sought direct evidence that acute exposure to environmental-strength electromagnetic fields (EMFs) could induce somatic reactions (EMF hypersensitivity).

METHODS: The subject, a female physician self-diagnosed with EMF hypersensitivity, was exposed to an average (over the head) 60-Hz electric field of 300 V/m (comparable with typical environmental-strength EMFs) during controlled provocation and behavioral studies.

RESULTS: In a double-blinded EMF provocation procedure specifically designed to minimize unintentional sensory cues, the subject developed temporal pain, headache, muscle twitching, and skipped heartbeats within 100 s after initiation of EMF exposure ($p < .05$). The symptoms were caused primarily by field transitions (off-on, on-off) rather than the presence of the field, as assessed by comparing the frequency and severity of the effects of pulsed and continuous fields in relation to sham exposure. The subject had no conscious perception of the field as judged by her inability to report its presence more often than in the sham control.

DISCUSSION: The subject demonstrated statistically reliable somatic reactions in response to exposure to subliminal EMFs under conditions that reasonably excluded a causative role for psychological processes.

CONCLUSION: EMF hypersensitivity can occur as a bona fide environmentally inducible neurological syndrome.

Radiation from Cordless Phones Causes Heart Irregularities, According to New Research Published Today in the European Journal of Oncology

October 23, 2010. Boulder, CO. Cordless phones, which transmit a similar pulsed signal as Wi-Fi networks at 2.4 Gigahertz, have been shown to impact heart rate in new research published today in the *European Journal of Oncology*.

READ ABSTRACT

The double-blind, peer reviewed study validates the condition complained of by increasing numbers of people across the globe today called 'electrosensitivity', demonstrating immediate effects on heart rate, almost doubling the heart rate in some cases. The study, **"Provocation Study using Heart Rate Variability Shows Radiation from 2.4 GHz Cordless Phone Affects Autonomic Nervous System"** (Eur. J. Oncol. Library, vol. 5) was led by Prof. Magda Havas, PhD of the Environmental & Resources Studies Department at Trent University, Canada. Co-investigators included Jeffrey Marrongelle, Bernard Pollner, Elizabeth Kelley, Camilla R.G. Rees and Lisa Tully.

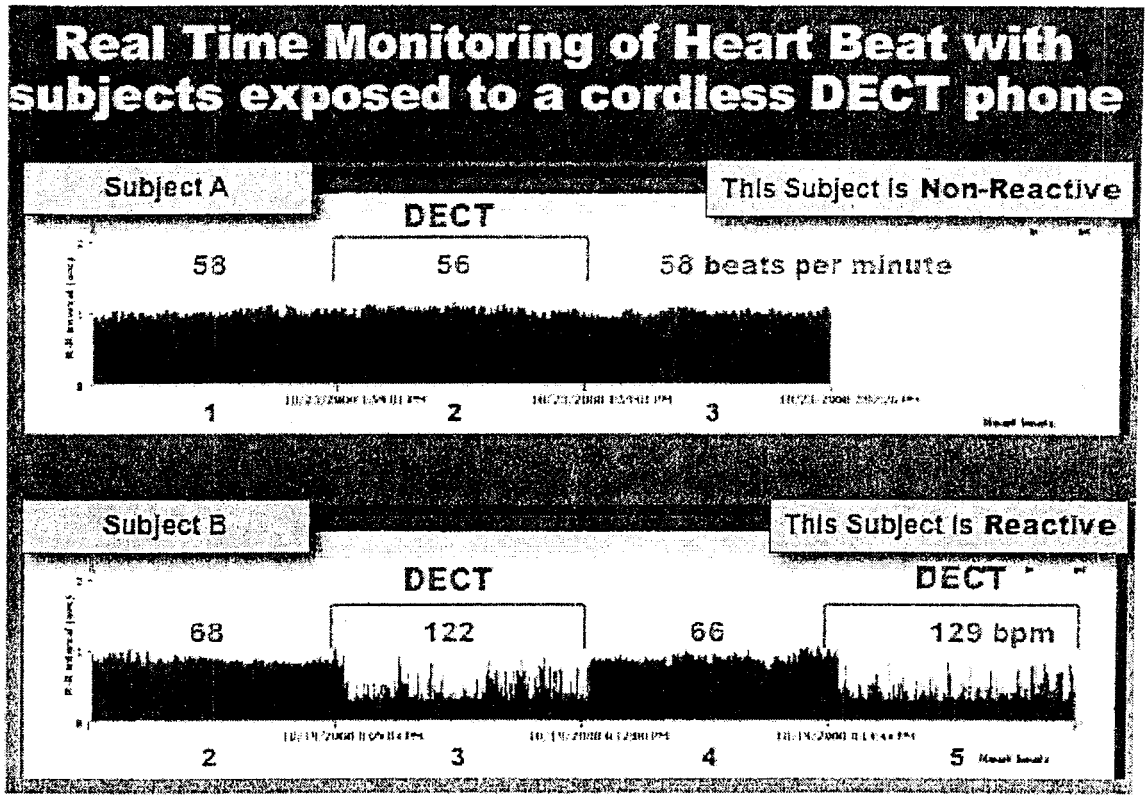
Patients today experiencing electrohypersensitivity symptoms are commonly put on drugs for other conditions with similar symptoms, instead of being taught how to create an electromagnetically clean environment to eliminate symptoms.

Havas' new study adds to the growing interest in the health effects of cell phones, which also transmit microwave radiation, broadening the focus beyond cell phones' association with brain tumors to their potential effect on other systems, including the heart. It also raises serious concern about risks of exposing schoolchildren to Wi-Fi networks, providing a possible explanation for why some children in schools with Wi-Fi are being diagnosed with, and medicated for, heart irregularities that they believe may linked to Wi-Fi. (See **CBS News Coverage on Dangers of Wi-Fi in School** and **Canadian Global TV Coverage of Dangers of Wi-Fi in School**)

"What we found is what many people have said for a long time about devices that emit microwaves," stated Dr. Havas. "People don't just feel ill, their heart begins to race and this is measurable with medical heart monitoring devices."

AUDIO INTERVIEW WITH DR. HAVAS

In the image below, from the study *"Provocation Study using Heart Rate Variability Shows Radiation from 2.4 GHz Cordless Phone Affects Autonomic Nervous System"* by Havas et al. Subject B experienced an increase in heart rate on exposure to a nearby portable phone. The heart rate immediately returned to the baseline after the cordless phone was unplugged.



Download Image Here

Havas' study in the *European Journal of Oncology* on heart rate variability was blinded, which means that the volunteers did not know when the phone was on or off. Forty percent (40%) of subjects had a moderate to severe reaction only when the phone's base station was on, and emitting microwaves. Those who responded experienced arrhythmia (irregular beats of the heart) and/or tachycardia (rapid heart rate). The symptoms were often accompanied by feelings of pain or pressure in the chest and anxiety that would appear and disappeared for no apparent reason.

This is the first study documenting immediate and dramatic changes in heart rate associated with microwave radiation exposure at levels of exposure well below (0.5%) federal guidelines in Canada and the United States (1000 microW/cm2). It points to the extraordinary inadequacy of current exposure guidelines to protect the public's health.

Havas states, "While not everyone who is electrically sensitive responds in this manner, those who do will have difficulty being in environments where microwave radiation is present, which is virtually everywhere in our modern, wireless culture." She adds, "Cordless phones and cell phones as well as wireless computers and wi-fi networks generate this form of microwave radiation."

Additional symptoms of EHS include headaches, fatigue, difficulty concentrating, poor short-term memory, difficulty sleeping, skin problems, tinnitus, nausea, and dizziness. Many of these symptoms are subjective and difficult to measure.

Havas' study heralds the ability of health practitioners to determine if cardiac irregularities might be

triggered by electromagnetic radiation, using readily available assessment technology, before resorting to invasive or chemical symptom-suppressing cardiac therapeutics.

READ STUDY PUBLISHED IN THE EUROPEAN JOURNAL OF ONCOLOGY October 23, 2010

Dr. Havas is a world-renowned expert in electromagnetic fields. Her teaching and research is concerned with the biological effects of electromagnetic pollution including radio frequency radiation, electric and magnetic fields, dirty electricity and ground current. She is author of the *BRAG Antenna Ranking of Schools Report*, which teaches schools how radiation exposure from neighborhood cell phone towers and antennas can be assessed and remediated, *Zory's Archives*, an ongoing review of thousands of recently released studies on the biological effects of electromagnetic fields, dating back over a half century, drawn from U.S. government and military, and Russian and Eastern European, sources, and co-author of *"Public Health SOS: The Shadow Side of the Wireless Revolution"*.

[redacted]

EXHIBIT D

STATEMENT FROM SANTA CRUZ COUNTY PUBLIC HEALTH
OFFICIAL CITING RISKS OF SMARTMETER ™ PROGRAM

County of Santa Cruz

HEALTH SERVICES AGENCY

POST OFFICE BOX 962, 1080 EMELINE AVE., SANTA CRUZ, CA 95061-0962
TELEPHONE: (831) 454-4114 FAX: (831) 454-5049 TDD: (831) 454-4123

Poki Stewart Namkung, M.D., M.P.H.
Health Officer
Public Health Division

Memorandum

Date: January 13, 2012

To: Santa Cruz County Board of Supervisors

From: Poki Stewart Namkung, M.D., M.P.H. PSN
Health Officer

Subject: Health Risks Associated With SmartMeters

Overview

On December 13, 2011, Santa Cruz County Board of Supervisors directed the Public Health Officer to return on January 24, 2012, with an analysis of the research on the health effects of SmartMeters.

Background

In order to analyze the potential health risks associated with SmartMeters, the following questions should be asked:

1) What is the SmartMeter system and what is the potential radiation exposure from the system?
2) What scientific evidence exists about the potential health risks associated with SmartMeters?
3) Are there actions that the public might take to mitigate any potential harm from SmartMeters?

SmartMeters are a new type of electrical meter that will measure consumer energy usage and send the information back to the utility by a wireless signal in the form of pulsed frequencies within the 800 MHz to 2400MHz range, contained in the microwave portion of the electromagnetic spectrum. SmartMeters are considered part of 'smart grid' technology that includes: a) a mesh network or series of pole-mounted wireless antennas at the neighborhood level to collect and transmit wireless information from all SmartMeters in that area back to the utility; b) collector meters, which are a special type of SmartMeter that collects the radiofrequency or microwave radiation signals from many surrounding

buildings (500-5000 homes or buildings) and sends the information back to the utility; and c) proposed for the future, a power transmitter to measure the energy use of individual appliances (e.g. washing machines, clothes dryers, dishwasher, etc) and send information via wireless radio frequency signal back to the SmartMeter. The primary rationale for SmartMeters and grid networks is to more accurately monitor and direct energy usage.

The public health issue of concern in regard to SmartMeters is the involuntary exposure of individuals and households to electromagnetic field (EMF) radiation. EMFs are everywhere, coming from both natural and man-made sources. The three broad classes of EMF are:

- extremely low frequency, ELF (from the sun or powerlines)
- radio frequency, RF (from communication devices, wireless devices, and SmartMeters)
- extremely high frequency, known as ionizing radiation (x-rays and gamma rays)

Much of this exposure is beyond our control and is a matter of personal choice; however, public exposure to RF fields is growing exponentially due to the proliferation of cell phones, and wireless fidelity (Wi-Fi) technology. To understand the relationship between EMF from SmartMeters and other sources, it is helpful to view the electromagnetic spectrum:

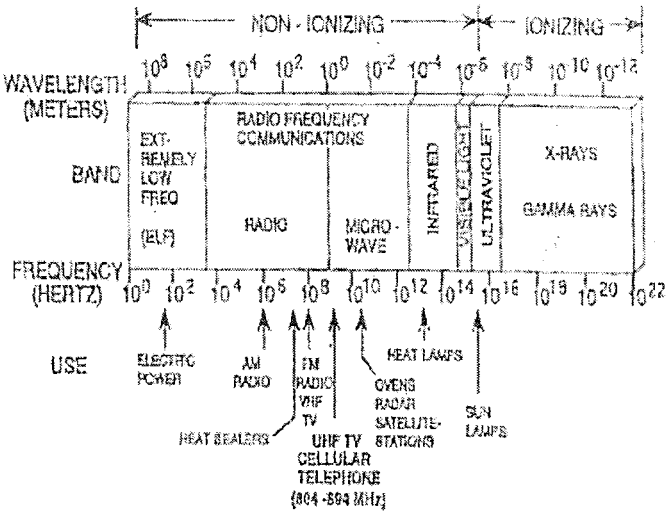


Fig. 1: The electromagnetic spectrum, showing the relations between ELF and RF fields, wavelength and frequency, and the ionizing and non-ionizing portions of the spectrum.

The Federal Communications Commission (FCC) has adopted limits for Maximum Permissable Exposure (MPE) that are based on exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP). The limits vary with

the frequency of the electromagnetic radiation and are expressed in units of microwatts per centimeter squared. A SmartMeter contains two antennas whose combined time-averaged public safety limit of exposure is 655μW/cm² (Sage, 2011). According to the California Council on Science and Technology (CCST) Report (2011), within distances of three to ten feet, SmartMeters would not exceed this limit. However, CCST did not account for the frequency of transmissions, reflection factors, banks of SmartMeters firing simultaneously, and distances closer than three feet. There are numerous situations in which the distance between the SmartMeters and humans is less than three feet on an ongoing basis, e.g. a SmartMeter mounted on the external wall to a bedroom with the bed placed adjacent to that mounting next to the internal wall. That distance is estimated to be one foot. The CCST Report also states that SmartMeters will generally transmit data once every four hours, and once the grid is fully functional, may transmit "more frequently." It has been aptly demonstrated by computer modeling and real measurement of existing meters that SmartMeters emit frequencies almost continuously, day and night, seven days a week. Furthermore, it is not possible to program them to not operate at 100% of a duty cycle (continuously) and therefore it should not be possible to state that SmartMeters do not exceed the time-averaged exposure limit. Additionally, exposure is additive and consumers may have already increased their exposures to radiofrequency radiation in the home through the voluntary use of wireless devices such as cell and cordless phones, personal digital assistants (PDAs), routers for internet access, home security systems, wireless baby surveillance (baby monitors) and other emerging devices. It would be impossible to know how close a consumer might be to their limit, making safety a uncertainty with the installation of a mandatory SmartMeter.

This report will focus on the documented health risks of EMF in general, the relevance of that data to SmartMeters exposure, the established guidelines for RF safety to the public at large, and then provide recommendations to ameliorate the risk to the public's health.

Evidence-based Health Risks of EMFs

There is no scientific literature on the health risks of SmartMeters in particular as they are a new technology. However, there is a large body of research on the health risks of EMFs. Much of the data is concentrated on cell phone usage and as SmartMeters occupy the same energy spectrum as cell phones and depending on conditions, can exceed the whole body radiation exposure of cell phones phones (see Attachment B1, Figure 4). In terms of health risks, the causal factor under study is RF radiation whether it be from cell phones, Wi-Fi routers, cordless phones, or SmartMeters. Therefore all available, peer-reviewed, scientific research data can be extrapolated to apply to SmartMeters, taking into consideration the magnitude and the intensity of the exposure.

Since the mid-1990's the use of cellular and wireless devices has increased exponentially exposing the public to massively increased levels of RF. There is however, debate regarding the health risks posed to the public given these increased levels of radiation. It must be noted that there is little basic science funding for this type of research and it is largely funded by industry. An intriguing divide, noted by Genuis, 2011 is that most

research carried out by independent non-government or non-industry affiliated researchers suggests potentially serious effects from many non-ionizing radiation exposures, most research carried out by independent non-government or non-industry affiliated researchers suggests potentially serious effects from many non-ionizing radiation exposures research funded by industry and some governments seems to cast doubt on the potential for harm. Elements of the controversy stem from inability to replicate findings consistently in laboratory animal studies. However, analysis of many of the conflicting studies is not valid as the methodology used is not comparable. Despite this controversy, evidence is accumulating on the results of exposure to RF at non-thermal levels including increased permeability of the blood-brain barrier in the head (Ebernardt, 2008), harmful effects on sperm, double strand breaks in DNA which could lead to cancer genesis (Phillips, 2011), stress gene activation indicating an exposure to a toxin (Blank, 2011), and alterations in brain glucose metabolism (Volkow, 2011).

In terms of meta-analyzed epidemiological studies, all case-control epidemiological studies covering >10 years of cell phone use have reported an increased risk of brain tumors from the use of mobile phones (Hallberg, 2011). Other studies have pointed to an increasing risk of acoustic neuroma, salivary gland tumors, and eye cancer after several years of cell phone use and the tumors occur predominantly on the same side of the head as the phone is used. The analysis of brain cancer statistics since the mid 20th century in several countries reveals that brain tumor formation has a long latency time, an average of over 30 years to develop from initial damage (Hallberg, 2011). Therefore using studies such as the Interphone Study which looked as shorter latency periods for the development of specific brain cancers will result in inconclusive data.

Another potential health risk related to EMF exposure, whose legitimacy as a phenomen remains contentious, is electromagnetic hypersensitivity (EHS). In the 1950's, various centers in Eastern Europe began to describe and treat thousands of workers, generally employed in jobs involving microwave transmission. The afflicted individuals often presented with symptoms such as headaches, weakness, sleep disturbance, emotional instability, dizziness, memory impairment, fatigue, and heart palpitations. Clinical research to verify the physiological nature of this condition did not begin in earnest until the 1990's and found that the EMF involved was usually within the non-ionizing range of the electromagnetic spectrum. In the early 2000's, estimates of the occurrence of EHS began to swell with studies estimating the prevalence of this condition to be about 1.5% of the population of Sweden (Hilleert et al., 2002), 3.2% in California (Levallios et al., 2002), and 8% in Germany (infas Institut fur angewandte Sozialwissenschaft GmbH, 2003).

In 2004, WHO declared EHS "a phenomenon where individuals experience adverse health effect while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs)...Whatever its cause, EHS is a real and sometimes debilitating problem for the affected persons (Mild et al., 2004)."

Currently, research has demonstrated objective evidence to support the EHS diagnosis, defining pathophysiological mechanisms including immune dysregulation in vitro, with

increased production of selected cytokines and disruption and dysregulation of catecholamine physiology (Genuis, 2011).

Until recently, the diagnosis of EHS has not received much support from the medical community due to lack of objective evidence. In an effort to determine the legitimacy of EHS as a neurological disorder, however, a collection of scientists and physicians recently conducted a double-blinded research study that concluded that "EMF hypersensitivity can occur as a bona fide environmentally-inducible neurological syndrome (McCarty et al., 2011).

Safety Guidelines

The guidelines currently used by the FCC were adopted in 1996, are thermally based, and are believed to protect against injury that may be caused by acute exposures that result in tissue heating or electric shock. FCC guidelines have a much lower certainty of safety than standards. Meeting the current FCC guidelines only assures that one should not have heat damage from SmartMeter exposure. It says nothing about safety from the risk of many chronic diseases that the public is most concerned about such as cancer, miscarriage, birth defects, semen quality, autoimmune diseases, etc. Therefore, when it comes to nonthermal effects of RF, FCC guidelines are irrelevant and cannot be used for any claims of SmartMeter safety unless heat damage is involved (Li, 2011).

There are no current, relevant public safety standards for pulsed RF involving chronic exposure of the public, nor of sensitive populations, nor of people with metal and medical implants that can be affected both by localized heating and by electromagnetic interference (EMI) for medical wireless implanted devices. Many other countries (9) have significantly lower RF/MW exposure standards ranging from 0.001 to 50 $\mu W/cm^2$ as compared with the US guideline of 200-1000 $\mu W/cm^2$. Note that these recommended levels are considerably lower that the approximately 600 $\mu W/cm^2$ (time-averaged) allowed for the RFR from SmartMeters operating in the low 900 MHz band mandated by the FCC based on only thermal consideration.

In summary, there is no scientific data to determine if there is a safe RF exposure level regarding its non-thermal effects. The question for governmental agencies is that given the uncertainty of safety, the evidence of existing and potential harm, should we err on the side of safety and take the precautionary avoidance measures? The two unique features of SmartMeter exposure are: 1) universal exposure thus far because of mandatory installation ensuring that virtually every household is exposed; 2) involuntary exposure whether one has a SmartMeter on their home or not due to the already ubiquitous saturation of installation in Santa Cruz County. Governmental agencies for protecting public health and safety should be much more vigilant towards involuntary environmental exposures because governmental agencies are the only defense against such involuntary exposure. Examples of actions that the public might take to limit exposure to electromagnetic radiation can be found in Attachment B2.

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[redacted]

EXHIBIT E

STUDY SHOWING IMPACTS TO MAMALIAN BRAIN RELATED TO LEARNING, MEMORY AND ALZHEIMER'S IMPACTED BY WHOLE EMF EXPOSURE

Greek Researchers Show Crucial Regions of the Brain Related to Learning, Memory, Alzheimer's Impacted by Whole Body EMF Exposure in Animals

25.01.2012 by emily Category Electromagnetic Health Blog

A Greek scientific study led by Adamantia Fragopoulou and Lukas Margaritis has demonstrated important protein changes in the brain of animals following whole body exposure to RF electromagnetic fields, similar to the kind of microwave radiation emitted from cell phones, portable phones, WiFi and wireless computer equipment. The study, **"Brain proteome response following whole body exposure of mice to mobile phone or wireless DECT base radiation"**, was published in *Electromagnetic Biology and Medicine*, Early Online: 1–25, 2012 (See Abstract, below).

Important regions of the brain necessary for **learning**, **memory** and **other functions of the mammalian brain** were impacted by the microwave radiation, including the **hippocampus**, **cerebellum** and **frontal lobe**, at exposures *below* the ICNIRP (*International Commission on Non-Ionizing Radiation Protection*) safety

guidelines. A total of 143 proteins in the brain were impacted by the RF radiation over a period of 8 months, providing new evidence for a potential relationship between everyday cell phone use, wireless transmitters and wireless computer equipment and electrosensitivity symptoms, such as headaches, dizziness and sleep disorders, as well as with tumors, Alzheimer's and even metabolic effects.

The study simulated 3 hours of cell phone exposure over eight months, 8 hours of DECT portable phone exposure over eight months, and included a sham exposure control group. The results showed both down regulation and up regulation of the proteins.

TABLE 1 Number of differentially expressed proteins across three major brain regions, following long-term electromagnetic radiation exposure to conventional mobile phone (M) and DECT wireless base (B).

	Hippocampus		Frontal lobe		Cerebellum	
Proteins	B	M	B	M	B	M
Upregulated	11	37	12	19	8	36
Downregulated	11	33	11	18	10	18
Total number of proteins changed	22	70	23	37	18	54

Several **neural function related proteins** (i.e. Glial Fibrillary Acidic Protein (GFAP), Alpha-synuclein, Glia Maturation Factor beta (GMF), and apolipoprotein E (apoE)), heat shock proteins, and cytoskeletal proteins (i.e. neurofilaments and tropomodulin), were shown to be impacted by the radiation, as well as **proteins of the brain metabolism** (i.e. Aspartate aminotransferase, Glutamate dehydrogenase), in *nearly all of the brain regions studied.*

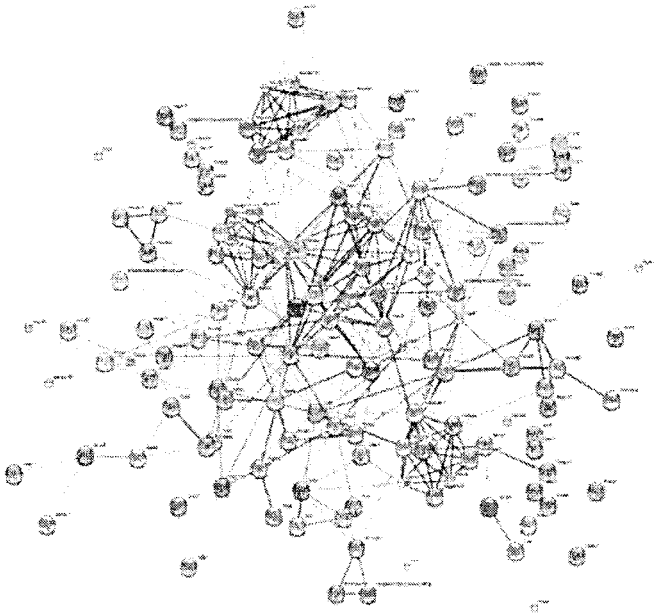
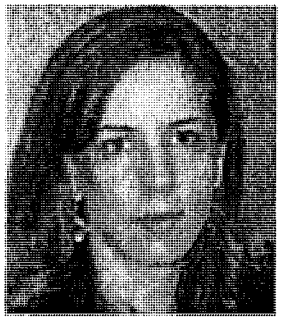


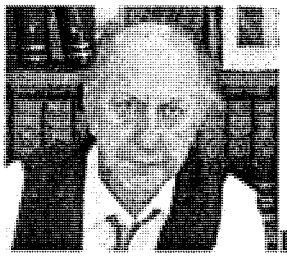
Figure 2 from the study shows the 143 proteins that have changed (up- or down-regulated) and their functional relationship based on a literature survey.



Adamantia F. Fragopoulou, M.Sc., PhD Candidate, in the Dept of Cell Biology and Biophysics at University of Athens, Greece, lead author of the study, says,

"Our study is important because it shows for the first time protein changes in the mouse brain after EMF exposure and in particular in very crucial regions like **hippocampus, cerebellum** and **frontal lobe**, all **involved in learning, memory and other complicated functions of the mammalian brain**. We have demonstrated that **143 proteins** are altered after electromagnetic radiation, including proteins that have been correlated so far with Alzheimer's, glioblastoma, stress and metabolism. In its perspective, this study is anticipated to throw light in the understanding of such health effects like headaches, dizziness, sleep disorders, memory disorders, brain tumors, all of them related, to the function of the altered brain proteins.

"Until now there is limited evidence relating EMFs with the impact on specific brain proteins. Further analysis of the affected proteins as well as replicating the experiment under similar conditions (data presently under analysis) is expected to offer new insights explaining the overall effects."



Lukas H. Margaritis, PhD, Professor Emeritus (as of Sept 2010) of Cell Biology and Radiobiology, Dept of Cell Biology and Biophysics, University of Athens, head of the Athens research group, says,

"A **high throughput approach (mass characterization of biomolecules, similar to microarrays that analyze the total genes of an organism)** as that of the **Proteomics*** has never been used so far in **EMF research of BRAIN TISSUES** following whole body exposure of model animals (mice) at **SAR values below ICNIRP's recommendations**. It is also the first time that wireless DECT phones base radiation is involved in lab animal studies and specifically in such molecular effects. The message taken out of this work is that people should be very cautious when using mobile phones next to their body (especially next to their brain), whereas the wireless DECT should be located as far away as possible from places that people use to spend many hours a day, not to mention children of all ages."

** Proteomics is the study of the structure and function of proteins. Proteins are the primary components of the physiological metabolic pathways of all cells. They influence the functioning of all bodily systems, such as the immune system, endocrine system, neurological system (including cognitive function),*

respiratory system, etc. Malfunction in protein integrity has been linked to hereditary diseases, nervous system disorders, diabetes, to name just a few cases. Proteins are responsible for energy production and information transfer, in fact modern CELL BIOLOGY considers that there is no single cellular function that is not mediated by proteins.

The study by Fragopoulou et al. suggests immediate follow up on these findings are warranted, as changes in molecular effects in the brain can raise questions about what the effects would be on the brain ***after much longer durations*** of exposure to RF radiation, as is common today from frequent cell phone use and wireless exposures, as well as the ***effect of cumulative exposures*** on the brain and mental functioning; immune system defects; fatigue; chronic sleep disorders; and effects on fetuses and sperm quality. The research extends our understanding from the **Volkow et al. study** (*JAMA. 2011;305(8):808-813. doi: 10.1001/jama.2011.186*), which demonstrated impacts of cell phone radiation exposure on brain glucose metabolism, without understanding the mechanisms of action. The Fragopoulou et al. study presents a plausible theory why glucose metabolism in the brain may become altered, possibly through an oxidative stress effect.

Special Concern for Children

Regarding the implications of the Greek findings for the learning capability of children in formative years, the authors say,

"The evidence for disregulation of proteins in the brain from whole body exposure to RF/MW radiation, such as the radiation emitted by cell phones, portable phones, wireless devices or ambient RF/MW from cell towers, whether proteins are upregulated or downregulated, is of great concern for its impact on children's capacity to learn. "

When considered together with other studies published by the University of Athens team (Fragopoulou et al., 2010, on **spatial memory disorder,** and Ntzouni et al., 2011 on **recognition memory disorders,** the authors say, "This proteome study implies that mobile phone radiation exposure at a normal intensity (and even below ICNIRP's guidelines) is capable of detuning **learning/memory functions** and possibly other brain functions important **in person-to-person communication and understanding.** The impacts on society are unpredictable as EMFs are not a drug that is delivered to specific body parts or functions. EMFs can attack through oxidative stress every single cell that receives enough energy at non-thermal levels. The potential consequences for learning, memory and interpersonal relations, at the very least, need society's immediate attention, given the widespread exposure to microwave radiation across the globe."

People exposed to microwave radiation from cell phones, wireless networks and citywide Wi-Fi have long complained of cognitive difficulties ranging from attention problems, difficulty focusing, poor memory, visual and hearing disruptions, headaches, dizziness, depression and foggy thinking. The Fragopoulou et al. study deepens scientists' understanding of the ***mechanisms of action*** of microwave radiation's effect on the brain, and on mental functioning, due to changes in proteins and in protein functioning .

Dr. Martin Blank, Associate Professor, Department of Physiology and Cellular Biophysics, Columbia University, and Past President of the Bioelectromagnetics Society, says,

"The paper by Goodman and Henderson (1987) showed that short-term (minutes) exposure to EMF will

stimulate protein synthesis, and Fragopoulou et al. now show that this can lead to important changes in brain composition and function. Such changes may account for symptoms like insomnia, nervousness, fatigue, headaches, etc. that people report after exposure to cell phones and other wireless technologies. The biological verdict became obvious when Goodman and Blank (1994) showed that cells react to EMF as potentially harmful by activating the cellular stress response. There is no question that we should limit our exposure to EMF to help protect our brains and all cells in the body."

Studies Showing RF Effects Below Safety Guidelines

A growing body of research clearly shows health effects from microwave radiation *at non-thermal levels* of exposure, and effects at exposures far lower than international safety guidelines. One review of the literature, by Carlos Sosa, MD of Columbia, South America, found biological effects from non-thermal levels of EMF exposure at exposure levels well below international safety guidelines in several respects:

	Effects at:	Less Than Guidelines
Psychological changes	.03 W/kg	50x Less
Immune System Effects	.015 W/kg	100x Less
Increase Calcium Eflux	.005 W/kg	300x Less
DNA Damages	.0024W/kg	600x Less
Induces Stress Response	.0110 W/kg	1,600x Less
Affects BBB	.0004 W/kg	4,000x Less
Affects Cardia Ca	.00015 W/kg	10,600x Less
Enhances Cell Proliferation	.00002 W/kg	76,000x Less

Source: Carlos Sosa, MD

The UK charity MobileWise recently published ***"Mobile phone health risks: the case for action to protect children"*** in November 2011, summarizing and listing more than 200 peer-reviewed studies from a range of international research institutions linking mobile phones at non-thermal exposures to serious biological and health consequences.

A Russian team of researchers also has recently released a study published in **Radiation Biology, Radiation Ecology 2011.** Volume 51, No.5, p 611-623 showing **significant long-term (4 years) cognitive decline in children** (ages 7-12) in users of mobile devices compared to controls, once again demonstrating exposure guidelines are inadequate. Lead author of the study, Professor Yury Grigoriev, Chairman of Russian National Committee on Non-Ionizing Radiation Protection and a member of the WHO's International Advisory Committee on "EMF and Health", says,

"Our recent 4-year monitoring of effects from cell phone radiation on children, published in Radiation Biology. Radiation Ecology (Volume 51, No.5, 2011), demonstrates an increase in phonemic perception disorders, abatement of efficiency, reduced indicators for the arbitrary and semantic memory and increased fatigue. Over the four-year monitoring of 196 children ages 7-12 who were users of mobile communication devices, a steady decline in these parameters from high values to bottom standards compared to controls, was observed. **The short-term and long-term potential consequences for society from exposing children to microwave radiation from cellular communication devices must be immediately acknowledged, globally, and**

responsibly addressed."

A history of exposure standard setting in the telecommunications industry, The Procrustean Approach , by Don Maisch, PhD of EMF Facts in Australia, describes *'the manipulation of telecommunications standards by political, military, and industrial vested interests at the expense of public health protection.'*

The Seletun Scientific Statement, a statement by international scientists in February 2011 (watch video), called for reduction EMF exposures globally to reflect the known biological effects at radiation exposures far lower than international guidelines in order to protect the public health and the health of future generations.

The recent Fragopoulou et al. research adds to the body of science demonstrating we are changing and disregulating biological functioning in the brain with the unchecked proliferation of RF electromagnetic fields from telecommunication and utility technologies. These effects are occurring at exposures below safety guidelines and the safety guidelines urgently need to be changed to protect public health.

TESTIMONY 7

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. Please state your name and address.

A. [redacted]

Q. Was a CMP smart meter installed at your residence? If so, state approximately the date when it was installed.

A. Smart meter was installed on February 1, 2012 at [redacted] Rd.

Q. If a smart meter was removed and replaced by an analog meter at your request, please describe the circumstances of your request or complaint to CMP and their response.

A. [redacted]: I requested that the smart meter be replaced with the regular meter because my fiancé started with headaches everyday from April until an emergency surgery to remove a brain tumor (a fast growing glioblastoma tumor). Her chair was three feet from where the smart meter was installed outside. The smart meter was replaced on August 8, 2012.

Q. If you do not currently have a smart meter, are you paying the opt-out fees?

A. [redacted]: I was charged $51.00 to replace the smart meter with the old meter and $12.00 per month is added to current bills.

Q. Please describe why you do not want a smart meter at your residence. Identify any health concerns you may have about smart meters and whether

these concerns are based upon any specific physical or medical conditions that you or any of your family members may have.

A. [redacted]: Our health concern is that this could have caused my death (very early). [redacted] had headaches constantly for some time also. The glioblastoma tumor I had removed on May 5th was cancerous and chemo meds and radiation treatments last 2 ½ months. One MRI after and clear right now.

Q. Do you experience electromagnetic sensitivity symptoms in proximity to radio frequency devices, such as Wi-Fi, microwave ovens, cell phones, cordless phones, smart meters or other devices? Please describe the symptoms and the circumstances when they occur.

A. As far as we know just the smart meter.

Q. If you have physical or medical conditions, including sensitivity to electromagnetic radiation, have these conditions been diagnosed? Identify the diagnosis or description of the condition.

A. No real answers as to whether smart meters caused the medical emergency. [redacted]: To add I had an MRI at [redacted] Hospital in November 2010 and results were normal – no tumors and no cancers.

Q. Has your physician or other medical care provider made any recommendations about exposure to electromagnetic devices, including smart meters?

A. No. I have not had a chance to discuss this with them. Both of us have a family doctor – Dr. [redacted], [redacted] Healthcare Center. Oncology for [redacted]

is Dr. [redacted], [redacted] Hospital. Radiation Oncology – Dr. [redacted] for Cancer Care.

Q. Have you observed any pets exhibiting adverse reactions to smart meter transmissions? Describe the circumstances.

A. Our German Shepard did not stay around us in the living room and would constantly wet on the floor.

Q. If you had a smart meter for a period of time and experienced or observed symptoms or adverse reactions, did those symptoms or adverse reactions cease when the smart meter was removed? Describe the circumstances.

A. Yes. The headaches ended when the smart meter was removed. Tension slowed and we are feeling better.

Q. Has your experience with smart meters caused any disruptions in your daily living? Please describe the circumstances?

A. [redacted] had major loss of memory, confusion and headaches. [redacted] had major tension and headaches. Daily living was very hard. Starting in October, 2012, I will have an MRI done every three months and was told the tumor could come back.

Q. Please tell us anything else that you want us or the Public Utilities Commission to know about your experiences and circumstances.

A. We had an option not to have the smart meter installed and basically thought it would be okay. Unfortunately it was not. We got very behind on bills and had to pay and be broke. We still are, but still have to pay extra on the CMP bill each month. Before traveling to [redacted] radiation treatments we had to invest in a used

vehicle to travel as the vehicle we had prior could not get a new sticker, so we had to junk it.

Dated this 23rd day of January, 2013.

[redacted]

STATE OF MAINE
~~CUMBERLAND~~, ss:
FRANKLIN

January 23, 2013

Personally appeared the above-named [redacted], and stated under oath that the foregoing Affidavit made by them is true and based upon their own personal knowledge, information or belief, and so far as upon information and belief, they believe the information to be true. Before me,

Roberta S. Meisner

Notary Public/Attorney-at-Law

Roberta S. Meisner

Name Typed or Printed

My Commission Expires: 02/24/2019

ROBERTA S. MEISNER
Notary Public, Maine
My Commission Expires February 24, 2019

TESTIMONY 8

PRE-FILED DIRECT TESTIMONY
OF [redacted]
MPUC Docket No. 2011-00262

Q. **Please state your name and address.**

A. [redacted]

Q. **Was a smart meter installed at your residence? If so, state approximately the date when it was installed.**

A. Yes, in late 2005, Central Hudson installed one for our weekend home in [redacted], New York, and in June, 2009, Con Edison installed one on our [redacted], New York residence.

In 2006, my husband, our two teenage sons, and I began spending weekends and vacations at our new house in [redacted] There was an AMR (automatic meter reading) digital utility meter (DU) on a pole 100 feet from that house, which at the time, had no meaning for me, except that I occasionally saw a truck pull up to take a meter reading. AMR DU meters are an early version of "smart meters."

In June 2009, Con Edison installed an AMR electric transmitting digital meter on the outside of my home in [redacted] New York. They also installed a transmitting digital gas meter in my basement. The electric meter was labeled as follows:

Centron
0716701200 CL200 240V 3W Type C1SRP 30TA 1.okh
Ca. 0.5 FM 2s 60Hz
A72AQ 7978929. 59689 345

I did not record the information from the Central Hudson AMR DU meter or from the Con Edison gas DU meter.

Q. **Please describe any adverse reactions you have had to the smart meters.**

A. From 2006 to 2009, when I was at our home in [redacted] I had sporadic and unusual heart palpitations, always at night, which would jolt me out of my sleep. This happened only when I was in [redacted] In 2008, I went to my doctor for a check up and to have my heart tested. He found me in good health with nothing wrong with my heart. At that time, I did not know any information about the pulsing electromagnetic emissions from DU meters and that these meters were causing this type of reaction in other people.

For most of the summer of 2009, we traveled back and forth between [redacted] and [redacted] I continued to have sporadic heart events.

After the summer months, we returned to [redacted], where an electric AMR DU meter had been installed in June 2009, and in September 2009 I began noticing the following unusual symptoms: Agitation, Memory and word loss, Inability to concentrate on my work, Nervousness, Unusual menstrual disruption; A mole began to grow larger on my back.

At 51, I wondered if I was developing an early form of Alzheimer's disease. I was not well, which at the time I described as feeling "unhinged," and I again went to my doctor but he did not know what was wrong with me.

In February 2010, during a major snowstorm in [redacted], I was in my living room, next to my fireplace, about five feet away from the electric AMR transmitting meter, outside my living room window. My husband was traveling and my sons were not at home. The electricity went on and off several times during that storm. Suddenly during one of these electrical events, I heard a very high pitched piercing sound in my right ear and I experienced painful pressure in both of my ears. This caused me to double over in pain.

Along with the symptoms I had been experiencing previously, as noted above, I began to develop worse symptoms: Severe heart palpitations; A loud and very disturbing buzzing-pulsing sound especially in my right ear; Extreme agitation; Interrupted sleep with nightmares of being attacked; Waking with severe heart palpitations; The mole on my back began to blow up and grow larger; Pains in my jaw and teeth.

I became terrified that I was going to die of a heart attack. I began to sleep on my kitchen floor so that the sound of the refrigerator would drown out the terrible buzzing in my ears. When I left [redacted] for [redacted], I had the same symptoms there. Some of the symptoms would lessen when I went outside, so I began to suspect that something was wrong inside, perhaps with the electricity.

After a conversation with an electrical specialist, I began to suspect that my symptoms might be traceable to the AMR DU meters that Central Hudson and Con Edison had installed. The DU meters were in fact the only newly introduced electrical and technical appliances in our homes.

Q. **Did you have the smart meters removed? If so, please describe the circumstances of your request or complaint to the utility companies and their response.**

A. In February 2010, after I became suspicious that the Radiofrequency/Microwave (RF/MW) radiation emissions from the AMR DU meters were making me sick, I

requested both Central Hudson and Con Edison to remove all AMR DU meters from both of my homes.

Central Hudson replaced the electric AMR DU meter with an analog meter.

Con Edison required me to get a letter from my doctor, which shocked me. I wondered how my personal medical information was the business of a utility company. Con Edison removed the gas AMR DU meter, but instead of replacing the electric AMR DU meter with an analog meter, they installed another electric DU meter, which they told me was not an AMR meter and had NO antenna or RF/MW radiation. They said that I would need to provide them, in the future, with meter readings. They also told me that I would be hearing from their health division, which I never did. Because at that time I was uneducated about both electromagnetic radiation and various meter types, I was grateful that Con Edison made the switch and I was hopeful that this new DU meter would have no effects on my health.

I recorded the following information from the second DU meter that Con Edison installed on my home.

Schlumberger Centron
CL200 120V 3W Type CN15
30TA 1.okh
Ca. 0.5 FM 25S 60Hz
HF5006914736AAV*
71BQ 6914736
25 440 021

My symptoms became worse after the second DU meter was installed. I then pleaded with Con Edison to remove the second DU meter and I told them that " I might die" if they did not. Con Edison removed the second and final DU meter from my home on March 12, 2010, and replaced it with an analog meter.

Q. **Please explain why you wanted the smart meters removed.**

A. The only possible explanation for the change in my health was that new transmitting meters with unbearable and unrelenting radiofrequency radiation emissions had been installed in and on our home in [redacted] and in [redacted].

During the time that the AMR DU meters were on our homes, my husband developed high blood pressure and had to be placed on blood pressure medication. My family was unusually agitated during this time.

I have learned that other people in [redacted] also became ill after AMR DU meters were installed on their homes. None of them has been able to get the utility companies to remove the AMR meters despite vigorous requests for the utilities to do this. The

utilities claim the meters are safe and are flatly refusing to remove any meters, even when a letter from a doctor has been supplied asking for their removal.

When I asked the "Meter Relations" department (212-460-4111) at Con Edison if I could see a copy of the test results for human exposure to the radiofrequency/microwave (RF/MW) radiation from the meters, I was told that I must obtain a subpoena to acquire that information.

AMR electric meters are not Underwriter's Laboratory Approved, which means that state and federal agencies approved the meters but did not test them for health and safety and that is why Con Edison refused to answer my question. To the best of my knowledge no transmitting digital utility meters AMR or "smart" were tested for health and safety, yet the meters emit and transmit levels of RF/MW radiation, designated a Class 2B Carcinogen by the World Health organization.

Q. **Did your symptoms or adverse reactions cease when the smart meters were removed?**

A. Yes. In the hours following Con Edison's final removal of the last DU meter from my home my symptoms became less extreme. Specifically, on March 4, 2010, when Con Edison replaced the first AMR DU meter with another DU meter, my symptoms continued to worsen. My heart felt as if it was flipping in my chest. I was in a terrified state, unable to sleep and truly frightened that I would have a heart attack. After making many more calls to Con Edison, on March 12, 2010, Con Edison workers, including a manager of the meter department, came and removed the second electric DU meter from my house and finally replaced it with an analog meter.

My immediate responses to the removal of the DU meter were so remarkable that I recorded them.

I felt as if I were being released from being electrocuted; I felt weighted down with exhaustion; the buzzing-pulsing became quieter; I felt tingling in arms.
Within hours I began feeling slightly better. The loud buzzing-pulsing did not go away but inside my house it got noticeably quieter. My thoughts became less scrambled.

Within weeks: The mole on my back bled, dried up and fell of (documented by my dermatologist); I began to menstruate again, but never again normally as was the case before the meter was installed.

Q. **Are you paying opt-out fees?**

A. I have not been asked to pay opt-out fees by Central Hudson or Con Edison. I am, however, one of the only homeowners for whom both of these utility companies have removed the DU meters. As of today, both utility companies are refusing to remove

any DU meters, including for homeowners who have provided medical letters to the utilities.

Q. **Do you or any of your family members experience electromagnetic sensitivity symptoms in proximity to radio frequency devices, such as Wi-Fi, microwave ovens, cell phones, cordless phones, other devices?**

A. We had Wi-Fi, DECT portable phones, cell phones and fluorescent light bulbs for many years and to my knowledge they had never bothered me. Since this happened to me, I have physical symptoms, which at times are unbearable, when I am exposed to these devices.

My husband, two sons and I had lived in our homes with wireless internet, DECT phones and cell phones for many years. Our lives have been drastically altered since this happened to me. We have spent close to $40,000 in electrical and medical bills since 2010, so that I can remain at home. Since being injured by the RF/MW radiation emissions from the DU meters, I am no longer able to physically tolerate wireless equipment.

The symptoms I have when I am in direct contact with some wireless equipment and some electrical equipment are: Splitting pain and pressure in my head and ears; My throat closes up; Loss of sleep; Loss of concentration; Ringing in my ears; Heart racing.

Since the DU meters, both my husband and my younger son have experienced periodic but mild reactions when near a cell tower. My son has experienced electrical sensations in his ears while going through his college library security system. My older son, who was attending [redacted] College in [redacted] the entire time the DU meters were on our home in [redacted] has not experienced physical symptoms when near wireless devices.

Q. **Do you experience symptoms when you are near other smart meters?**

I develop symptoms of tinnitus, heart racing and a pain in my head when I am as near as one foot and as far as 15 feet away from an AMR or smart DU meter, when it transmits or emits signals. I develop symptoms when I visit homes and buildings with AMR DU meters. I can no longer spend time at friend's homes, which have the meters. I feel symptoms outside in my neighborhood because there are meters everywhere. Using an HF35C Electrosmog Analyser, I can read a constant stream of varying levels of RF/MW signals from the meters. DU meters have a very distinct radiation ping sound. Contrary to what Con Edison has stated to me in writing, the particular electric DU meters used by Con Edison can send RF/MW signals once every one to two seconds and up to 30 seconds apart.

This "signal hopping" technology is a non-stop, 24/7, RF/MW exposure which surrounds people inside their homes and neighborhoods, with a pulsing/pinging RF/MW signal similar to that of a human heart. I no longer have an AMR meter on my home, but the RF/MW radiation continues to ping in my home through the electrical wiring from the AMR DU meters in my neighborhood.

Q. **Has your physician or other medical care provider made any recommendations about exposure to electromagnetic devices, including smart meters?**

A. I have seen several doctors and medical professionals about this problem since 2010 and I have had my heart checked. My primary doctor, a homeopath M.D., has been very helpful for me.

My doctor has recommended that I should not have any DU meters of any type at my homes. He provided me with letters for both Con Edison and United Water stating that, because of my extreme sensitivity to electromagnetic radiation, I must not have any RF/MW emitting devises on my home. It is obvious from what has happened to me in the last two and a half years that when I am exposed to wireless and some electromagnetic radiation, I become ill. I am much healthier when I am not exposed to any wireless equipment.

Within a year of this happening to me and because of the strange and painful symptoms I was experiencing in my jaw and teeth, I sought out special dentists, one to remove a nickel post in a root canal in my upper jaw and the other to remove all of the metal dentistry, including mercury, cadmium, nickel and silver from my mouth. Although these sound like extreme measures, my research led me to believe that these procedures might relieve me of symptoms caused by electromagnetic radiation conducting through the metal in my mouth. This proved to be very helpful for me.

Q. **Has your experience with smart meters caused any disruptions in your daily living?**

A. My life has been dramatically changed since this whole nightmare started. In 2008, I was a fully functioning, working [redacted] and [redacted]. During that year I illustrated the book, [redacted] published by Rutgers University Press.

I have never yet returned to the level of work I was doing before I was injured by the radiation emissions from the DU meters. Wireless equipment and some electrical equipment make me feel sick. I can no longer use a cell phone, other than in an emergency. I can no longer use wireless Internet or be in a home or building for a long period of time, which uses Wi-Fi. I can no longer be near a person using a cell phone. I can no longer be near cell phone antennas, which means I can no longer go to our local farmer's market because of its close proximity to cell transmitters. I used to work in an artists studio with other artists, but I can no longer do that and I am now

very isolated. Traveling has become very difficult for me because Wi-Fi affects my sleep.

I can no longer attend village board meetings in [redacted] because of the cell transmitters on the roof. My life has changed very much. I consider myself very lucky that I have not lost my life, my family and my friends. I wish this had never happened to me.

Q. **Please tell us anything else that you want us or the Public Utilities Commission to know about your experiences and circumstances.**

A. I am living proof that DU meters, "radio on" or "radio off," make some people very sick. As my family and friends would attest to, I was perfectly happy using wireless technology and healthy in general before I was over-exposed to the extreme electromagnetic radiation from the DU meters.

Somewhere between the design and the manufacturing of all DU meters, something went terribly wrong and the radiation emissions from these flawed meters is far beyond what the utilities might have realized. Utility companies across the U.S. now know that some of their customers are becoming ill from this technology, yet they are holding on to this dangerous mistake because they invested billions of dollars into it.

The contamination of the electrical wiring from the meters must be investigated.

These are some of the questions that the utility companies must be required to answer and submit actual proof of their answers.

Were the meters tested for health and safety?
If so what was the testing method?
What are the levels and frequencies of RF/MW radiation that are being conducted on home and building electrical wiring?
What was the method of testing the RF/MW emissions?
What are the precise levels and frequencies of the RF emissions from the meters?
Were the meters tested in isolation?
Were the meters tested in combination with wireless electrical equipment such as Wi-Fi and DECT phones?

In a real life situation there might be electrical circuits in a home or building with faulty wiring, which could cause very high electromagnetic fields. Were the meters tested when attached to a home with faulty electrical wiring?

What happens when the conducted and pulsing RF/MW radiation from a "smart" meter contaminates wiring, which already has dangerous and high electromagnetic fields because of faulty wiring?

As far as I know there was never proper testing to determine the outcome of attaching

this flawed and dangerous technology to an entire home electrical system. We know for a fact that the particular AMR DU meters used in my area of New York were never properly tested. The fact is utility companies and state public service commissions jumped on this ill-conceived project without ever requiring proper testing for health and safety. When I asked Con Edison for the health and safety testing on the meters, they told me that I would need a subpoena for that and that I should contact the FCC.

The FCC has made it very clear to me that they are not in the health business but only the frequency business. We should not need to fight to be safe in our homes, safe from utility companies that are trying to bully their customers because of a $10 billion mistake.

AMR and "smart" meters are flawed and dangerous technology. They must be recalled.

Dated this 18 day of January, 2013.

[redacted]

STATE OF NEW YORK
WESTCHESTER, ss:

January 18, 2013

Personally appeared the above-named [redacted], and stated under oath that the foregoing Affidavit made by her is true and based upon her own personal knowledge, information or belief, and so far as upon information and belief, she believes the information to be true. Before me,

Notary Public/Attorney-at-Law

Roger Robles
Name Typed or Printed

My Commission Expires: 08/15/15

ROGER ROBLES
Notary Public - State of New York
NO. 01RO6246742
Qualified in Westchester County
My Commission Expires 8/15/15