

Deposition of David Savitz

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UNITED STATES DISTRICT COURT  
DISTRICT OF OREGON  
Portland Division

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AHM, by and through her Guardian ad  
Litem and father David Mark Morrison,  
and David Mark Morrison, individually,

Plaintiffs,

v.

CV No. 11-739-MO

Portland Public Schools,  
Defendant.

-----X

VIDEOTAPED DEPOSITION of DAVID SAVITZ, Ph. D.,  
taken by Plaintiffs at the offices of Fink & Carney  
Reporting and Video Services, 39 West 37th Street,  
Sixth Floor, New York, New York 10018, on Friday,  
January 27, 2012, commencing at 9:19 o'clock a.m.,  
before Tina DeRosa, a Shorthand (Stenotype) Reporter  
and Notary Public within and for the State of New  
York.

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A P P E A R A N C E S:

Deposition of David Savitz

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SHAWN E. ABRELL, ESQ.  
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BY: BRUCE L. CAMPBELL, Esq., of Counsel

PRESENT:

DAVID MARK MORRISON

L. LLOYD MORGAN

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Savitz, Ph.D

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THE VIDEOGRAPHER: We are now  
going on the record. The time is  
9:19 a.m. on January 27, 2012.

This is the videotaped  
deposition of David Savitz, Ph.D. in

7 Deposition of David Savitz  
the matter of David Mark Morrison, et  
8 al. versus Portland Public Schools  
9 under the jurisdiction of the United  
10 States District Court, District of  
11 Oregon.

12 This deposition is being held  
13 at 39 West 37th Street, New York, New  
14 York.

15 My name is Omar Melendez and I  
16 am the video specialist. The court  
17 reporter is Tina DeRosa and we are  
18 representing Fink & Carney Reporting.

19 May I have an introduction  
20 from counsel.

21 MR. ABRELL: My name is Shawn  
22 Abrell, attorney for David Morrison.

23 MR. CAMPBELL: And Bruce  
24 Campbell, attorney for the Defendant,  
25 Portland Public Schools.

1 Savitz, Ph.D

4

2 THE VIDEOGRAPHER: Will the  
3 court reporter please swear in the  
4 witness.

5 D A V I D S A V I T Z, Ph.D., called as a  
6 witness, having been first duly sworn by  
7 Tina DeRosa, a Notary Public within and for  
8 the State of New York, was examined and  
9 testified as follows:

10 DIRECT EXAMINATION

11 BY MR. ABRELL:

Deposition of David Savitz

12 Q Good morning, Dr. Savitz.  
13 A Good morning.  
14 Q I'm the attorney for David Morrison  
15 and are you aware of lawsuit against the school  
16 and what -- and that he's trying to remove WI-FI  
17 from the school?  
18 A Yes.  
19 Q Okay. And have you ever had your  
20 deposition taken before?  
21 A Yes, I have.  
22 Q Do you understand what a deposition  
23 is?  
24 A I think so, yes.  
25 Q Okay. Do you understand you need to

5

1 Savi tz, Ph.D  
2 give an audible response?  
3 A Yes, I do.  
4 Q Have you had an opportunity to talk  
5 to your lawyer regarding this deposition?  
6 A Yes, I have.  
7 Q Anyone else you spoke to in  
8 preparing for this deposition?  
9 A No, not that I can think of.  
10 Q Who was the first person that  
11 contacted you regarding this case?  
12 A Mr. Campbell called and that was,  
13 that was the initial contact.  
14 Q Okay. Have you worked with any  
15 other lawyers besides Mr. Campbell and his firm

Deposition of David Savitz  
16 regarding this case?  
17 A No, I have not.  
18 Q Is it fair to say that if I ask you  
19 a question you don't understand you'll ask me to  
20 rephrase it?  
21 A I'll do that.  
22 Q Is it fair to say that if you  
23 answer, if you answer a question you will have  
24 understood the question?  
25 A Yes.

6

1 Savitz, Ph.D  
2 Q If I ask it well enough.  
3 If you need a break feel free to ask  
4 me and if you want to talk to your lawyer at any  
5 time feel free to ask me. If you want some  
6 refreshments feel free to ask me.  
7 You understand that you are under  
8 oath?  
9 A Yes, I do.  
10 Q You understand a court reporter has  
11 given you an oath. And you understand you have an  
12 obligation to tell the truth?  
13 A Yes, I do.  
14 Q And your testimony here is the same  
15 as testifying in court.  
16 Do you understand that?  
17 A Yes, I understand.  
18 Q Now, do you have any questions for  
19 me before we begin?  
20 A No, I don't.

Deposition of David Savi tz

21 Q I'm going to show you what's marked  
22 as Exhibit 27. This is your declaration.

23 (Declaration of David Savi tz,  
24 Ph.D. was marked as Deposition Exhibit  
25 No. 27 for identification, as of this

1 Savi tz, Ph.D

2 date.)

3 MR. CAMPBELL: Thank you. I  
4 have the -- Lloyd's reply to Dr.  
5 Savi tz's declaration.

6 MR. ABRELL: Thank you. Do  
7 you have any extra copies of this.

8 I'd like to go off the record.

9 THE VIDEOGRAPHER: The time  
10 now is 9:24 a.m. Off the record.

11 (Whereupon, at 9:24 o'clock  
12 a.m., a recess was taken to 9:29  
13 o'clock a.m.)

14 (The deposition resumed with  
15 all parties present.)

16 D A V I D S A V I T Z, Ph.D., resumed,  
17 and testified further as follows:

18 THE VIDEOGRAPHER: The time  
19 now is 9:29 a.m. On the record.

20 BY MR. ABRELL:

21 Q Dr. Savi tz, has anything changed  
22 between the time of your expert statement to now  
23 that would make you change your opinion and  
24 possibly do away with the need to be here?

7

25                   A           Deposition of David Savitz  
No, nothing has changed. I mean I

1                                   Savitz, Ph.D  
2    have read some additional articles and refreshed  
3    my memory on some things, but nothing that would  
4    change the basic opinions.

5                   Q        Okay, then. You are familiar with  
6    your expert report?

7                   A        Yes.

8                   Q        Okay. On Page --

9                   A        No.

10                               MR. CAMPBELL: Can I get a  
11                               copy, please.

12                               MR. ABRELL: It's in the works  
13                               over there.

14                   Q        I understand that you were retained  
15    by the Portland Public Schools to evaluate the  
16    Plaintiff's claims that wireless Internet or WI-FI  
17    causes cancer and other adverse health effects; is  
18    that correct?

19                   A        Yes, it is.

20                   Q        Have you received or expect to  
21    receive anything of value, for example, travel,  
22    non-consulting fees, payments, club memberships,  
23    frequent flier miles, et cetera other than what is  
24    stated in Paragraph 41 of your statement or from  
25    any other source for your services in this case?

1                                   Savitz, Ph.D

2                   A        Could I see Paragraph 41, sorry.  
                                  Page 7

Deposition of David Savitz

3 Q Yes, sir, absolutely. I show you  
4 what's marked Exhibit 27.

5 A The only addition is I will be  
6 reimbursed for travel. I assume I will be  
7 reimbursed for travel to this meeting.

8 Q Okay. In your report you state you  
9 are currently a Professor of Epidemiology and  
10 Obstetrics and Gynecology at Brown University.

11 Was this your true title?

12 A That's correct, yes.

13 Q Are you a medical doctor?

14 A No, I'm not.

15 Q Given your obstetrics and gynecology  
16 credentials, how many babies have you delivered?

17 A As I indicated I'm not a medical  
18 doctor, not a clinician. The appointment is  
19 involving research in perinatal health.

20 Q I guess we'll just start off with  
21 your background and where were you born.

22 A Born in Hamilton, Ohio.

23 Q Oh. I was born in Indiana.

24 A Okay.

25 Q And where did you go to undergrad?

1 Savi tz, Ph.D

10

2 A Brandeis University in  
3 Massachusetts.

4 Q And what degree did you get there?

5 A I got a Bachelor of Arts in  
6 psychology.



Deposition of David Savitz

7 Q And where did you go to grad school?  
8 A I went to Ohio State University  
9 initially starting in medical school there and  
10 then after a year and a half I switched over to  
11 the preventive medicine graduate program.  
12 Q And did you do internships from that  
13 or what research projects related to that?  
14 A I'm sorry, related to which?  
15 Q Your graduate school studies.  
16 A As a graduate student I did a  
17 Master's thesis research project as the Master's  
18 thesis and completed the required course work.  
19 Q And from grad school where did you  
20 go next?  
21 A I worked for a while at a contract  
22 research organization in Columbus called Battelle,  
23 B-A-T-T-E-L-L-E, and then I continued on for my  
24 Ph.D. in epidemiology at the University of  
25 Pittsburgh.

11

1 Savi tz, Ph.D  
2 Q So when you went to grad school at  
3 Ohio State that wasn't for your Ph.D.?  
4 A That was for my Master's degree at  
5 Ohio State.  
6 Q I see, so you went from your  
7 Master's to Ph.D.?  
8 A That's correct.  
9 Q Your Ph.D. once again was at?  
10 A University of Pittsburgh.  
11 Q What was your employment, a contract

Deposition of David Savitz

12 analysis, is that what you said?

13 A It's a contract research  
14 organization. Battelle does work in a lot of  
15 different areas of research.

16 I was in the ecology and ecosystems  
17 analysis section addressing human health concerns  
18 related to environmental agents.

19 Q All right. And what types of -- was  
20 it a clinical program?

21 A No. This was purely for research.  
22 We had a variety of sponsors, some government  
23 agencies, some other -- I don't remember, it's  
24 been quite a while, but other entities that would  
25 engage Battelle to complete research reports and

12

1 Savitz, Ph.D

2 some field evaluations, field studies, but  
3 nothing -- no clinical medical health care  
4 involved with that at all.

5 Q So no laboratory studies, more  
6 analytical?

7 A The group that I was involved with,  
8 they did do some laboratory research. The part I  
9 was involved with was more in the area of risk  
10 assessment of the evaluation of potential human  
11 health consequences related to environmental  
12 exposures.

13 Q All right. So your undergraduate  
14 degree, is that where you became an epidemiologist  
15 or was that through your Ph.D.?

Deposition of David Savi tz

16                   A        It began I guess in my Master's  
17 program. That was one of the areas that was  
18 covered in my Master's program, but then the  
19 specialty training is -- was at the doctoral  
20 level, University of Pittsburgh.  
21                   Q        And what year did you complete your  
22 doctorate?  
23                   A        1982.  
24                   Q        And where did you go from there?  
25                   A        The first job I had after my Ph. D.

13

1   Savi tz, Ph. D  
2 was at the University of Colorado. I was an  
3 Assistant Professor in the Department of  
4 Preventive Medicine in the University of Colorado  
5 School of Medicine.

6                   Q        Associate Professor?

7                   A        Assistant Professor.

8                   Q        For your Master's what was your  
9 thesis regarding?

10                  A        I was looking at determinants of  
11 smoking behavior. This was an interest in the way  
12 that individuals' psychology that determined  
13 continuing smoking versus cessation of smoking.

14                  Q        I had a hard time quitting myself.  
15   And what about your doctorate, what  
16 was your thesis papers or paper?

17                  A        My doctoral dissertation was a study  
18 of a group of rubber industry workers, looking at  
19 the potential mental health consequences of the  
20 solvent exposures that they had. Looking at risk

Deposition of David Savi tz

21 of mental hospitalizations, risk of suicide,  
22 other -- I think we had information on certain  
23 kinds of criminal behavior, but the idea was they  
24 had high exposures to certain kinds of solvents,  
25 chemicals that are known to have psychiatric,

14

1 Savi tz, Ph. D

2 potential psychiatric effects.

3 Q Were you ever considering getting --  
4 becoming a psychologist or --

5 A I was interested in psychology as an  
6 undergraduate and certainly thought about that and  
7 ended up choosing to go to medical school because  
8 it just, it seemed to have a broader array of  
9 options for health research.

10 Q So the University of Pittsburgh was  
11 a medical school?

12 A No? Public health school, graduate  
13 school of public health.

14 Once I left medical school at Ohio  
15 State that ended my medical training. I continued  
16 then in epidemiology as a research specialty  
17 thereafter.

18 Q At Ohio State?

19 A At Ohio State initially and then at  
20 University of Pittsburgh.

21 Q What caused you to drop out or to  
22 not pursue the medical program?

23 A Really didn't have an affinity for  
24 doing clinical work. I was interested in the

25 Deposition of David Savitz  
science and I completed all the requirements for

15

1 Savitz, Ph.D  
2 the first half of medical school, the basic  
3 science, pre-clinical part, but was not interested  
4 then in engaging in clinical practice.

5 Q I understand. After you received  
6 your doctorate where did you go from there. I  
7 guess I already asked you that.

8 A Yes.

9 Q Could you repeat where you went,  
10 University of Colorado and you became an Assistant  
11 Professor?

12 A That's correct.

13 Q And what year is that approximately.

14 A I initially went to Colorado just  
15 after I finished my dissertation, so I began in  
16 the fall of 1981.

17 Q And what -- how long did you  
18 continue in that position?

19 A I was there until through December  
20 of 1985.

21 Q Now, I understand that you were  
22 involved with a study to replicate the Weithimer  
23 Leeper study. Is that while you were at -- as an  
24 Assistant Professor?

25 A The work on that project began when

16

1 Savitz, Ph.D  
2 I was at the University of Colorado as an  
Page 13

Deposition of David Savitz

3 Assistant Professor and was completed after I had  
4 moved on to the University of North Carolina.

5 Q And you worked with Dr. Carpenter in  
6 that?

7 A Indirectly, yes. He was overseeing  
8 the research program that ultimately ended up  
9 being the source of support for our research  
10 activity there.

11 Q And that was run through the New  
12 York Department of Health?

13 A It was -- as I recall, there was a  
14 program overseen by Dr. Carpenter at the New York  
15 State Department of Health. There was a  
16 scientific advisory group that then solicited and  
17 selected research proposals to be funded, one of  
18 which was ours.

19 Q You said you became involved in risk  
20 assessment. Where did you receive training in  
21 risk assessment, in a formal university situation  
22 or in professional conferences?

23 A What I said was that when I was at  
24 Battelle working there after my Master's degree  
25 that one of the activities that our group engaged

1 Savitz, Ph.D  
2 in and the department I was in was environmental  
3 risk assessment. I was providing initially some  
4 of the epidemiologic input or expertise into that  
5 process.

6 Q Okay. I just want to kind of go

7 Deposition of David Savitz  
8 over your positions and then we'll get to your  
9 deposition or expert report.

10 From -- from your -- at the end of  
11 1985 at the University of Colorado, where did you  
12 go from there?

13 A I went to the University of North  
14 Carolina in the Department of Epidemiology.

15 Q Were a Professor there or --

16 A Over the time. I started off as an  
17 Assistant Professor and I don't remember the exact  
18 years, but was promoted to Associate Professor and  
19 then full Professor.

20 Q Of epidemiology?

21 A Of epidemiology, that's correct.

22 Q And that was from 1985 until?

23 A I stayed at the University of North  
24 Carolina through 2005.

25 Q Saw some good basketball games.

A I saw a lot of good games.

18

1 Savitz, Ph.D

2 Q Was -- what was the reason why you  
3 left the University of Colorado?

4 A Given my interest in epidemiology  
5 and public health I was -- I wanted to be in a  
6 larger more prominent program in the field. The  
7 University of Colorado, it was a small group in a  
8 medical school and University of North Carolina  
9 was and is one of the leading programs in public  
10 health in the country.

11 Q Now, while you were at the

Deposition of David Savitz

12 University of North Carolina did you conduct  
13 research projects, solicit grants, those types of  
14 things?

15 A Yes, I did.

16 Q And what types of projects did you  
17 work on?

18 A There were a lot of them over the  
19 years there, but the general areas that they were  
20 focused in were environmental epidemiology,  
21 looking at health effects of environmental  
22 exposures and also related to that in reproductive  
23 epidemiology, looking at influences on the health  
24 of pregnancy and infants.

25 Q With environmental toxins?

19

1 Savitz, Ph.D

2 A Sometimes, but not always. A  
3 broader array of factors that included nutrition  
4 and stress and other physical activity and so on.

5 Q Okay. So from 2005 where did you go  
6 from there?

7 A When I left the University of North  
8 Carolina I joined the faculty at the Mount Sinai  
9 School of Medicine in the Department of Preventive  
10 Medicine there as a Professor.

11 Q Is that in California?

12 A In New York City.

13 Q New York City.

14 And could you state your, I'm sorry,  
15 your position again?



16                   A           Deposition of David Savi tz  
I was Professor of Preventive  
17   Medicine and also appointed as the director of the  
18   new research institute.

19                   Q           And what was that research institute  
20   called?

21                   A           The name has changed over time, but  
22   it was Institute for Public Health and Disease  
23   Prevention.

24                   Q           So from 2005 through -- are you  
25   still -- you're not still at that position?

1   Savi tz, Ph.D

20

2                   A           No.

3                   Q           How long were you at that position?

4                   A           I was there through August of 2010.

5                   Q           And what caused you to leave that  
6   position?

7                   A           I was interested in being back in a  
8   more academic environment in part of a group that  
9   was involved with public health more so than  
10   biomedical research and identified a very  
11   attractive opportunity at Brown University where I  
12   am now.

13                   Q           Okay. And what is your position --  
14   when you started off at Brown what was your  
15   position and what is your position now?

16                   A           I was appointed as full Professor.  
17   Initially it was in the Department of Community  
18   Health which was a constellation that included  
19   epidemiology and then subsequently the Department  
20   of Epidemiology became independent and so my title

Deposition of David Savi tz

21 simply changed to Professor of Epidemiology and  
22 throughout I've had a secondary appointment as  
23 Professor of Obstetrics and Gynecology.

24 Q In the med school?

25 A Yes. It's a little bit confusing,

21

1 Savi tz, Ph. D

2 the administrative structure. There's a public  
3 health program that houses the Department of  
4 Epidemiology. It's in the process of separating  
5 public health from the medical school. Obstetrics  
6 and gynecology is in the medical school at Brown  
7 University.

8 Q Now, when you were at the Mount  
9 Sinai School of Medicine did you publish papers  
10 there?

11 A Yes, I did.

12 Q And are they listed at Paragraph 5  
13 of your declaration or your expert report?

14 A The dates of these particular papers  
15 indicate that they would have all come before I  
16 joined the faculty at Mount Sinai School of  
17 Medicine.

18 Q So this list on Paragraph 5 is not a  
19 complete list of all the papers you've written?

20 A That's correct.

21 Q Is there relationship between your  
22 department at Brown and Brown University Hospital?

23 A There is no Brown University  
24 Hospital. The medical school is affiliated with a

25 Deposition of David Savitz  
network of hospitals in Providence.

22

1 Savitz, Ph.D

2 My involvement through obstetrics  
3 and gynecology is with Women and Infants Hospital  
4 which is the entity that houses the Department of  
5 Obstetrics and Gynecology.

6 Q What was the last paper that you  
7 wrote before leaving Mount Sinai?

8 A I would have to look at my CV. That  
9 sounds like a simple question, but I'm sure there  
10 were papers that were in process when I left and  
11 there's not a sharp dividing line in what I was  
12 doing in one position versus the other.

13 Obviously I was in the process of  
14 completing work while I was preparing to move to  
15 Brown. So I would have to really just match up  
16 the dates of that.

17 Q Did you complete those papers?

18 A Yes, I would assume so. Again, the  
19 nature of this academic work and, in fact, I've  
20 continued to develop papers with collaborators at  
21 Mount Sinai. I have continued with colleagues at  
22 North Carolina. The work continues even when we  
23 change positions. There's not a sharp dividing  
24 line that way.

25 Q Now, have you had any other --

23

1 Savitz, Ph.D

2 you've listed an employment position at Battelle,  
Page 19

Deposition of David Savitz

3 several professorships.

4 Is there any other employment that  
5 you've had since graduating college?

6 A No.

7 Q And is there any current  
8 organizations that you belong to?

9 A There are a number of professional  
10 societies that I belong to largely as -- that  
11 basically publish journals and sponsor research  
12 meetings.

13 Q And what's the name of those  
14 societies?

15 A Okay. This is going to be tough for  
16 the court reporter here. The International  
17 Epidemiological Association, the Society for  
18 Epidemiologic Research, the Society for Pediatric  
19 and Perinatal Epidemiologic Research, and the  
20 International Society for Environmental  
21 Epidemiology.

22 Q Are any of those paid positions?

23 A No.

24 Q So completely an honorary type  
25 society or --

24

1 Savitz, Ph.D

2 A Well, those are organizations I pay  
3 to belong to.

4 Q Okay.

5 A In other words, I pay in order to be  
6 a member and, therefore, receive the journal and

7                   Deposition of David Savi tz  
participate in the annual meetings.

8                   Actually, there are perhaps a couple  
9                   of others. I don't know, they are of the same  
10                  nature as a member of the American Epidemiological  
11                  Society and I also pay dues as a member of the  
12                  Institute of Medicine.

13                 Q       The International Commission on  
14                  Non-Ionizing Radiation, you're a member of that or  
15                  a Commissioner. Please explain your affiliation  
16                  with that organization.

17                 A       I'm --

18                 Q       And do -- I'm sorry, do you consider  
19                  that a professional society or what kind of  
20                  organization do you consider that?

21                 A       I don't think -- it's not an  
22                  organization I think of myself as belonging to in  
23                  any sense. In other words, I don't pay dues and I  
24                  don't list that on my CV as a society, let's say,  
25                  that I'm affiliated with.

25

1   Savi tz, Ph.D

2   I serve as a member of a particular  
3                  committee overseen by the International Council on  
4                  Non-Ionizing Radiation Protection. I'm a member  
5                  of, I believe it's called the Standing Committee  
6                  on Epidemiology.

7                 Q       Now, why do you not put that on your  
8                  CV?

9                 A       I think of that as simply -- well, I  
10                 would not list it as a society affiliation. I  
11                 would list it as committee service.

Deposition of David Savitz

12 I'm on committees for the March of  
13 Dimes and committees for the National Institutes  
14 of Health and I have been on committees for the  
15 American Cancer Society. It doesn't mean I belong  
16 to those organizations, rather they have interest  
17 in engaging me to advise or review evidence and  
18 evaluate evidence and that's the way it would be  
19 listed.

20 Q You said engaged, do you mean they  
21 pay you or employment type contracts. Are any of  
22 those paid committeeships?

23 A The ones I can think of are all  
24 non-paid and I'm simply reimbursed for my time.

25 There's a nominal payment from the

26

1 Savitz, Ph.D  
2 National Institutes of Health for serving on  
3 review committees. I'm just trying to think. I  
4 don't think there is -- that's the only one I can  
5 think of that would have any payment beyond travel  
6 expenses.

7 Q So I guess can you just tell me the  
8 committees that you're on?

9 A I would have to look back at my CV  
10 to see which ones are still active.

11 Q Now, that wasn't included with your  
12 expert report. Is there any reason why that was  
13 not included?

14 A I had no reason. I certainly can  
15 share it if requested to do so.

Deposition of David Savi tz

16 Q I would appreciate that. If you  
17 could provide that to your attorney and he can get  
18 us a copy.

19 So you can't remember, you can't  
20 currently sit here as you are and tell me the  
21 committees that you're on?

22 A I can try to -- what's difficult is  
23 some of them become dormant for extended periods  
24 of time and then I'm reminded that I'm still  
25 serving when they call us back to be engaged.

27

1 Savi tz, Ph. D

2 I am on a number of advisory  
3 committees and so on that I would really have to  
4 look through because, as I said, this is not  
5 something that something is happening every week  
6 or every month. Sometimes it's not even every  
7 year. It's sort of a nominal involvement,  
8 available as needed kind of situation.

9 Q Approximately how many of these --  
10 now, do you -- is there any difference between the  
11 prior committees you mentioned, the National  
12 Institutes of Health and ICNIRP, are they -- do  
13 you consider those advisory committees?

14 A Yes.

15 Q Turning -- regarding the  
16 International Commission on Non-Ionizing Radiation  
17 Protection, the word protection in that acronym or  
18 name, so is it true or is it the purpose of that  
19 group to protect people from the harmful effects  
20 from non-ionizing radiation. It that -- it's

Deposition of David Savitz

21 implied in the name. Is that what you do or that  
22 group does?

23 A My understanding of the organization  
24 is really actually quite limited. My role in it  
25 has been much narrower to participate in the

28

1 Savitz, Ph.D

2 evaluation of evidence and the reporting of the  
3 results of that evaluation. I have not been  
4 involved in what's done with that evaluation.

5 Q So the organization, though, it's  
6 involved with the protection of human beings from  
7 non-ionizing radiation; is that correct?

8 A Again, my understanding is not much  
9 deeper than as you described it based on the name  
10 of the organization.

11 My understanding is that they  
12 evaluate evidence and make recommendations that  
13 are intended to be protective of health.

14 Q So you -- you would agree then that  
15 we need protection from non-ionizing radiation; is  
16 that correct?

17 A Well, that's not -- again, that's  
18 not something that I get involved in the technical  
19 judgment of the sort of guidelines or regulations  
20 or decision-making.

21 If you're asking, obviously there  
22 are levels of exposure that I'm aware that can be  
23 harmful, so that I can understand in a general way  
24 that it makes sense that there be consideration of



25 regulati on.

29

1 Savitz, Ph.D

2 Q But the regulati on would be to  
3 protect people from the harmful effects of  
4 non-ioni zing radiati on; is that correct?

5 MR. CAMPBELL: Objecti on,  
6 vague.

7 A I'm just inferring based on the  
8 title of the organizati on. I don't have any  
9 firsthand sort of understanding. I have never  
10 read their charter, their missi on, their reason  
11 for bei ng.

12 As I said, I just get involved at  
13 the level of being brought in to help evaluate a  
14 parti cular line of research.

15 Q You're commissi oner of the standi ng  
16 commi ttee for ICNIRP?

17 A I'm not a commissi oner. I'm as far  
18 as I know just a member of the standi ng commi ttee  
19 on epi demi ology.

20 Q And you're not famili ar with the  
21 goals of that organizati on and you're on the  
22 commi ttee?

23 A That's correct. I'm given a fairl y  
24 -- I mean I could investigate further of course if  
25 I were, you know, inclined to, but I've accepted

30

1 Savitz, Ph.D

2 the sort of narrow involvement at the level of  
Page 25

Deposition of David Savitz

3 synthesizing, synthesizing and evaluating research  
4 on particular topics.

5 Q Does -- does that organization have  
6 any legal effect in any country?

7 A I really don't know.

8 Q Do they have any effect on the -- do  
9 they have any legal effect in the United States?

10 A I don't know.

11 Q In the guidelines that they  
12 promulgate?

13 A Again, I'm not familiar with the  
14 guidelines or the regulatory aspects of their  
15 activities.

16 I've only been involved at the level  
17 of synthesizing scientific evidence and generating  
18 reports that go to the scientific community as a  
19 whole, of course go to the organization as well.

20 Q And what is ICNIRP. What is that  
21 organization?

22 A I'm not sure I understand other than  
23 as the title implies. I know that it's a European  
24 based entity that is concerned with non-ionizing  
25 radiation and the potential health effects of

31

1 Savitz, Ph.D

2 that. I don't have an understanding of its legal,  
3 administrative, regulatory role beyond that.

4 Q So it's the protection of health  
5 effects from non-ionizing radiation; is that  
6 correct?

Deposition of David Savi tz  
MR. CAMPBELL: Object ion.

7

8

Asked and answered.

9

A I really don't know as I said beyond  
10 the general sense that they collect and integrate  
11 scientific information and establish guidelines.  
12 I don't know beyond that what the implications of  
13 those guidelines are in the regulatory sense.

14

Q Who is ICNIRP accountable to, any  
15 government organization, is it a private entity?

16

MR. CAMPBELL: Object ion.

17

Compound.

18

A I really don't know again at the  
19 level of how the organization is structured and  
20 even how it came about.

21

Q You're not familiar that it was  
22 founded by Repacholi. Do you know Mr. Repacholi?

23

A I met him a number of years ago and  
24 I know that he's been involved in this area of  
25 research for some time, but not much more than

1

Savi tz, Ph.D

32

2

that.

3

Q Is he still with the organization?

4

A I don't know.

5

Q You don't know.

6

Does he come to the committee  
7 meetings. Do you have meetings?

8

A The standing committee on  
9 epidemiology periodically has been asked to  
10 address a topic and to evaluate the evidence on  
11 that topic.

Deposition of David Savitz

12                   There's always been one of the  
13 members of the committee who is the liaison with  
14 the organization itself. That's never been me.  
15 It was initially Anders Ahlbom and then Anthony  
16 Swerdlow I think serves in that role still.

17                   And the way it's worked is that a  
18 question arises or we may decide that there's an  
19 important scientific issue to be addressed and  
20 that person relates it to the mission of ICNIRP  
21 and then when I get involved it's been, if you  
22 will, distilled into a particular technical  
23 question about again summarizing the evidence on a  
24 particular topic.

25                   And there's been a series of papers

33

1                   Savitz, Ph.D

2 that are reflected on my CV that have come out of  
3 the series of topics that we've been asked to  
4 address.

5                   Q     How did you become a member of the  
6 committee?

7                   A     I was invited initially by Anders  
8 Ahlbom.

9                   Q     What happened, is Mr. Anders --  
10 Mr. Ahlbom, is he still with the organization?

11                   A     He's not on our committee. I don't  
12 think he's involved any longer with ICNIRP, but I  
13 know for several years now he has been off the  
14 committee that I serve on.

15                   Q     Why -- why is he not there anymore?

16                   A           Deposition of David Savitz  
17                   My understanding was that he had  
18                   been doing this for many years and was, again it  
19                   was not a formal discussion I had, but he had  
20                   chosen to not continue to invest the time in this  
21                   particular activity.

22                   Q           So you're not aware that he was  
23                   found to be a telecom lobbyist?

24                                   MR. CAMPBELL:   Objection.  
25                                   Lack of foundation.

   (Press release dated May 23,

1                                   Savitz, Ph.D  
2                   2011 was marked as Deposition Exhibit  
3                   No. 28 for identification, as of this  
4                   date.)

5                   Q           I'd like to show you Exhibit 28.  
6                   Do you think that had any relation  
7                   or reason why he is no longer with the committee?

8                   A           I have no idea.

9                   Q           So were you aware that he was a  
10                  lobbyist at any time?

11                                   MR. CAMPBELL:   Objection.  
12                                   Assumes facts not in evidence.

13                  A           I had -- there was never a point at  
14                  which this issue was of relevance or concern.  
15                  He's a colleague that I respect as a scientist and  
16                  as a knowledgeable individual. He did a very good  
17                  job in leading our research group.

18                                   So I have no, again even with this I  
19                  have no basis for speculating about those issues.  
20                  I have no insight beyond, you know, what I just

Deposition of David Savi tz

21 read.

22 Q Now, you said the word concern.  
23 When you say the word concern is that your  
24 personal feelings or is that your professional  
25 opinion?

1 Savi tz, Ph. D

35

2 A I'm sorry, I don't remember how I  
3 used the word now.

4 Q I'll get back to that.

5 A Okay.

6 MR. CAMPBELL: When you come  
7 to a good stopping point I'd like to  
8 take a break.

9 MR. ABRELL: That's fine.  
10 Right now.

11 MR. CAMPBELL: You can finish  
12 up with this line of questioning if  
13 you'd like.

14 Q Okay. Did you -- how many reports  
15 have you generated while working at ICNIRP?

16 MR. CAMPBELL: Objection.  
17 Misstates the evidence.

18 A I again was --

19 Q To the best of your knowledge.

20 A I assume you mean as a member of the  
21 standing committee on epidemiology.

22 Q Correct.

23 A Which was again the only role that I  
24 had with ICNIRP. As best I can recall there were

25 Deposition of David Savitz  
four reports and again I could verify that from my

36

1 Savitz, Ph.D  
2 CV because we had decided at the beginning that we  
3 would only do this if we could publish our reports  
4 in the open scientific literature.

5 Q I'm sorry, you were concerned that  
6 your work wouldn't be published openly?

7 A No. We felt that if we were going  
8 to invest this level of effort it should be more  
9 than just advising ICNIRP. It should be used to  
10 inform the scientific community more broadly.

11 Q Was there an issue that it wouldn't  
12 be shared with the general population?

13 A No, just it's a matter of wanting it  
14 to be widely available and read.

15 Obviously when reports are housed  
16 solely within various agencies those who are  
17 motivated can of course find them and obtain them  
18 and usually get them off the web or other sources,  
19 but in terms of a broader awareness the scientific  
20 literature is much more effective.

21 You would find these articles that  
22 way through literature search mechanisms and  
23 through reading the journals and so our goal was  
24 that, as I said, if we were going to do this, you  
25 know, rather substantial amount of work involved

37

1 Savitz, Ph.D  
2 in reviewing the evidence we wanted to do

Deposition of David Savitz

3 everything we could to insure that it would be  
4 widely available and read.

5 Q Now, going back to Mr. Ahlbom, you  
6 state that you keep him in high regard; is that  
7 correct?

8 A Yes, I do.

9 Q To this day?

10 A Yes.

11 Q And ICNIRP, as a commissioner you're  
12 not paid any salary or anything related to that  
13 from that organization?

14 MR. CAMPBELL: Objection.

15 Again, misstates the evidence.

16 A Again, I'm not a commissioner. In  
17 my role on the standing committee of epidemiology  
18 I am reimbursed for travel expenses, at least most  
19 of them. They are fairly restrictive in their  
20 travel expense reimbursement, but that's the only  
21 financial involvement whatsoever.

22 Q And you said they are in Europe?

23 A They are based, know that the  
24 secretary with whom we communicate I believe is  
25 based in Germany, the person who handles the

1 Savitz, Ph.D

2 administrative aspects of travel expenses.

3 Q And what's the relationship with  
4 ICNIRP and the World Health Organization?

5 A I'm not aware or didn't know if  
6 there was one, a relationship there. Again, I've



7 Deposition of David Savitz  
not really been so involved at the higher levels  
8 of these organizations, so I don't know that there  
9 is a relationship.

10 Q Can you list the four reports that  
11 you generated at ICNIRP?

12 A I can try to describe them by topic  
13 area.

14 The first I believe was a review of  
15 the evidence on ELF, extremely low frequency  
16 electromagnetic fields. I believe Anders Ahlbom  
17 was the first author published in Environmental  
18 Health Perspectives. I can't even tell you the  
19 date though. I'd have to see that.

20 The second one I remember was  
21 dealing with, really strictly with methodologic  
22 aspects of studying radiofrequency radiation and  
23 health. I believe that one was also in  
24 Environmental Health Perspectives, but again I'm  
25 not a hundred percent sure.

1 Savitz, Ph.D

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2 And then there was a review of the  
3 research on particularly cell phones and cancer.  
4 That was published in Epidemiology, the journal  
5 called Epidemiology with Swerdlow as the first  
6 author, and then very recently a commentary in  
7 the -- on the Interphone study in Environmental  
8 Health Perspectives, again with Swerdlow as the  
9 first author.

10 I believe those are the only four  
11 reports.

Deposition of David Savitz

12 Q What was the fourth one, I'm sorry?

13 A It was a commentary on, I can't  
14 remember the exact title. Where we stand after  
15 the Interphone study, where the evidence on  
16 radiofrequency radiation and human health. Sort  
17 of an update to the comprehensive review, an  
18 update incorporating the information from the  
19 Interphone study that was published.

20 Q So where do we stand?

21 A Well, I mean that report gives the  
22 committee's consensus on that, that as indicated  
23 in my declaration I'm speaking for myself. I  
24 can't -- I don't want to speak for the committee,  
25 but it's basically compatible that with a growing

40

1 Savitz, Ph.D

2 body of evidence that it is, seems to me at least  
3 every increasing unlikely that there's any --  
4 there are any major health effects, that with the  
5 Interphone study which was interpreted as either  
6 by some as inconclusive or I guess by some as  
7 providing support for an effective mobile phone  
8 use on brain tumors, other tumors, my  
9 interpretation is that taken in its totality it  
10 really provided to me fairly clear evidence  
11 against that likelihood.

12 Not definitive, not the final word,  
13 but in evaluating where the evidence stands I  
14 think that the evidence for a possible adverse  
15 health effects, the likelihood of that was reduced



Deposition of David Savi tz

21 Assumes facts not in evidence.  
22 A Again to clarify, I was not involved  
23 in the level --  
24 Q You were not involved?  
25 A -- understanding their mission and

42

1 Savi tz, Ph. D  
2 policy. I was only involved with ICNIRP  
3 specifically through this rather narrow role, this  
4 narrow charge, if you will, of being on the  
5 Epidemiology Committee.  
6 Q So that is not related to the World  
7 Health Organization?  
8 A Again I don't know. It's ICNIRP.  
9 The question you had asked was whether there was a  
10 connection between ICNIRP and WHO and that I don't  
11 know.  
12 Q Have you ever held any positions or  
13 done any work or had any association with the  
14 World Health Organization?  
15 A The only involvement I can ever  
16 remember having I was part of a working group that  
17 was assembled addressing a range of environmental  
18 health concerns. In fact, actually a book came  
19 out of that meeting. This was quite some time  
20 ago. Nothing to do with non-ionizing radiation as  
21 best I recall.  
22 Q What year was that?  
23 A I'm going to guess late 1980's.  
24 Again, if I -- on my CV there's a book that came

25                                 Deposition of David Savitz  
out following that workshop.

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1                                 Savitz, Ph.D

2                                 I was co-editor of a book and I  
3 don't have that many books, so I could find it  
4 that way and find out what the date was.

5                                 Q     How many books have you published?

6                                 A     I have I believe three that I have  
7 been involved with. One as a sole author, the  
8 other two as a co-editor.

9                                 Q     Now, going back to the ICNIRP  
10 committee, when did you first serve on the  
11 standing committee. When were you first  
12 introduced there?

13                                A     Again I'm making my best guess. The  
14 best I can recall would have been around 2000 it  
15 began. I'm going to guess it began around ten  
16 years ago.

17                                Q     And since then you have published  
18 four reports?

19                                A     I've been a co-author of the four of  
20 the reports that our group --

21                                Q     Did those require funding to -- were  
22 they studies?

23                                A     No, these were not original studies.  
24 These were syntheses of evidence and the money  
25 that was required was really just to bring us

44

1                                 Savitz, Ph.D

2 together, the travel expenses to have the

Deposition of David Savitz

3 committee meet and confer.

4 Q So there was no -- no one funding  
5 those reports. There was no funding for those  
6 reports?

7 A Again, the funding was solely to  
8 allow the committee to travel to get together and  
9 it was an international committee, so obviously  
10 there are travel expenses involved, but there were  
11 no other funds beyond the travel expenses that  
12 were provided.

13 Q So it's a completely unpaid  
14 position?

15 A That is correct.

16 Q And you do it out of the good of  
17 society?

18 A And I admit I enjoy some of the  
19 travel we've done. There were some very nice  
20 places and also it's a chance to work with  
21 colleagues from around the world that are very  
22 interesting and enjoyable to work with.

23 Q What funds have you received over  
24 the length of your career from electrical power,  
25 telecommunication companies and/or consultants and

45

1 Savitz, Ph.D  
2 legal firms representing these companies?

3 MR. CAMPBELL: Objecti on.  
4 Vague.

5 A I'm trying to just think about this  
6 for a moment of -- my research -- there are a

7                   Deposition of David Savitz  
8     couple of instances where I have done research  
9     where the ultimate source of money was the  
10    electric utility industry.

11                   The first one of which was the  
12    program administered by Dr. Carpenter through the  
13    New York State Power Lines Project. But I  
14    emphasize that they did such a good job of  
15    insulating us from the funding source that I was  
16    almost done with the study before I realized  
17    that's where the money came from.

18                   Q     It's a good --

19                   A     To his credit and the program's  
20    credit there was absolutely no potential for, you  
21    know, influence or -- there was no line of  
22    communication. The funding agency was set up such  
23    that there was that buffer.

24                   I have done work sponsored by the  
25    Electric Power Research Institute, an entity that  
   is funded through fees from the electric utility

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1                   Savitz, Ph.D  
2     industry, but again the -- there's a buffering  
3     there so that we would be responsive to a project  
4     advisory committee of academics and scientists,  
5     public health experts, but the funding was coming  
6     from the electric utility industry.

7                   Q     How long have you been with EPRI?

8                   A     I'm not -- I'm not with them in any  
9     sense. I have done funded research supported by  
10    them on and off. I haven't done any for some time  
11    now. For, gosh, it, you know, it could be over

Deposition of David Savitz

12 ten years since I completed the last project that  
13 they supported.

14 Q And is there any other power,  
15 electrical power companies, telecommunication  
16 companies, consultants or legal firms representing  
17 those companies have you done any more work beyond  
18 what you just stated?

19 A To the best of my recollection I  
20 have not.

21 Q Okay. I'm going to ask you to turn  
22 to Exhibit 27, your declaration -- your expert  
23 report.

24 Turning to Paragraph 5 -- oh, did  
25 you -- did you in preparing for this deposition,

47

1 Savitz, Ph.D

2 who all have you spoken to to prepare for this  
3 deposition?

4 MR. CAMPBELL: Asked and  
5 answered.

6 A I cannot recall anybody other than  
7 Mr. Campbell that I've spoken to about this, per  
8 se.

9 Obviously I've had many discussions  
10 with colleagues over the years about this research  
11 and the epidemiologic work, but not again strictly  
12 specifically in regard to this report and this  
13 deposition, I have not spoken to anyone else about  
14 that.

15 Q No one besides individuals from



Deposition of David Savi tz

16 Mr. Campbell's firm?

17 A That's correct, yes.

18 Q And have you had a chance to review  
19 the reply of Lloyd Morgan to your expert report?

20 A Yes, I have.

21 Q And do you agree with his  
22 conclusions in his report?

23 MR. CAMPBELL: Objecti on.

24 Vague.

25 A I -- I don't agree with many of the

48

1 Savi tz, Ph. D

2 points raised. Obviously it would have to be sort  
3 of a point by point discussion, but in terms of my  
4 overall summary opinions those are not changed as  
5 a result of reviewing that report.

6 Q Okay. Regarding Paragraph 5c., we  
7 were unable to find a -- find that cite.

8 Is there any reason why that's not  
9 available?

10 A It's -- I can't imagine what it  
11 would be. It's Epidemiologi c Revi ews. Maybe REVS  
12 was not the right abbreviation for that. It's --  
13 again I don't, I would have to check that, but  
14 everything else I believe is correct about it.  
15 Volume 11 and so on.

16 Q All right. Going to Paragraph 5a.,  
17 that was 1988.

18 What was the source of funding for  
19 that study?

20 A This was reporting on work that was  
Page 41

Deposition of David Savi tz

21 supported by the New York State Power Lines  
22 Project.

23 Q Okay. And going to 5b., the Use of  
24 Wiring Configurations and Wire Codes for  
25 Estimating Externally Generated Electric and

49

1 Savi tz, Ph. D

2 Magnetic Fields.

3 That study concluded that wire codes  
4 are inadequate substitute of electromagnetic  
5 fields; is that correct?

6 A As I recall based on the information  
7 specifically in Denver at that time we did indeed  
8 corroborate that there was a relationship between  
9 wire codes and measured magnetic fields.

10 Q So -- just so I understand, a wire  
11 code is -- you would -- you would have three  
12 different types of wire codes depending on the  
13 power of the transmission line; is that correct?

14 A Again, this is from a non-engineer,  
15 but the basic understanding is that the wire codes  
16 were designed to characterize the distance of the  
17 line from the, in this case the home of interest,  
18 and an estimate of the current on the line and in  
19 combining those in particular ways to estimate  
20 the, in rough terms, the level of magnetic fields  
21 that you would find in the home.

22 Q So it's kind of like an average as  
23 opposed to an exact measurement?

24 A Well, again, it is -- it's a crude

25 Deposition of David Savitz  
or less specific than an exact measurement, but

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1 Savitz, Ph.D  
2 the intent was that it would be more of a stable  
3 marker of long-term exposure. That's what we were  
4 interested in.

5 We really weren't interested in the  
6 exposure of any given moment. We were interested  
7 in the average or typical magnetic fields over an  
8 extended period of time.

9 Q And you came up with in that study a  
10 particular wire codes. Is that where they were  
11 established in that study?

12 A In order to characterize exposure we  
13 used both wire codes and in home measurements of  
14 magnetic fields.

15 Q So both wire codes and actual  
16 measurements?

17 A That's correct.

18 Q And who -- what was the source of  
19 funding for that project?

20 A There are several papers that are  
21 listed there and there are others that are not  
22 listed that are all -- were all supported by the  
23 funding through the New York State Power Lines  
24 Project.

25 Q So almost all of these were funded

51

1 Savitz, Ph.D  
2 by the New York Power Line Project?

Deposition of David Savitz

3           A     About half of them were funded from  
4 that source.

5           Q     Okay.

6           A     Others were, if you will, unfunded  
7 and then some were funded by the Electric Power  
8 Research Institute.

9           Q     Some were funded by EPRI?

10          A     Correct.

11          Q     So would you say that EPRI and its  
12 electrical utility members would have financial  
13 impacts if it were found that radiation from  
14 electricity caused disease?

15                   MR. CAMPBELL:  Objection.

16                   Calls for speculation.

17          A     Again, I -- those issues were just  
18 not issues of relevance or concern I think in part  
19 because we tried to make sure that, as I said,  
20 that there's this buffer between the researchers  
21 and the, you know, the business interests of the  
22 industry, something that EPRI was very effective  
23 at and something that I, of course, welcomed.

24                   I had no -- I could see no benefit  
25 to the research in being involved at all with its,

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1                   Savitz, Ph.D

2 if you will, downstream implication that way.

3           Q     So once again if -- if a study was  
4 to find harmful effects would that impact the  
5 utility, electrical utility members' financial  
6 impacts?

Deposition of David Savitz  
MR. CAMPBELL: Objection.

7

8 Calls for speculation.

8

9 A Again, I really don't have expertise  
10 in how they deal with regulations and what's  
11 passed on to the ratepayers and how -- I just  
12 don't know, if you will, the business side of that  
13 at all.

9

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I had a narrower focus which was to  
do the best job we could to generate valid  
scientific information about this and it was not  
difficult for me to leave it at that.

18

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Q Dr. Savitz, was your study in -- was  
the study at Paragraph 5a., was that in response  
to Wertheimer, Leeper's Electrical Wiring  
Configurations and Childhood Cancer, a similar  
study in Denver that found an increased risk of  
childhood cancers in proximity of high current  
capacity wiring?

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MR. CAMPBELL: Objection.

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Savitz, Ph.D

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Assumes facts not in evidence.

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A My understanding was that, and again  
I -- it was secondhand, but what was going on in  
New York State was this concern raised by the  
plans to place high voltage transmission lines,  
that there were health concerns and the Wertheimer  
and Leeper study of course was a source of those,  
at least some of those concerns given that there  
was a desire to do research that would either help  
to support or refute those earlier findings and

Deposition of David Savitz

12 there was a particular interest in doing a study  
13 in Colorado.

14 And so that I was responding, if you  
15 will, to a research opportunity to do something  
16 that I thought was interesting and worth doing.

17 Q So you actually performed one of the  
18 most remarkable replications studies that actually  
19 confirmed the original findings in Wertheimer,  
20 Leeper; is that correct?

21 A The way I describe the findings, and  
22 again we are stepping back in time now to where  
23 ours was really the third study of this issue.

24 There had been one done sometime  
25 before that, actually in Rhode Island, that we

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1 Savitz, Ph.D

2 found evidence supporting an association primarily  
3 of wire codes with childhood cancer.

4 We saw weaker associations than  
5 Wertheimer and Leeper had seen, and so that -- but  
6 overall there was -- certainly it provided some  
7 support for there being an association.

8 Q I'm sorry to jump around, but going  
9 back to the EPRI funding of many of these studies,  
10 you're not concerned about whether or not, you  
11 know, any adverse findings of health effects or  
12 disease caused would impact the members of the  
13 utility commission. You're not concerned with  
14 that being a problem or even issue in your  
15 conclusions in the papers. That's not relevant to

Deposition of David Savitz

16 you?

17 A The -- no, that's not relevant to  
18 me. I mean the way I think of this is that I will  
19 be most helpful to society, if you will, or to  
20 science by doing the highest quality most  
21 objective work I can and reporting it as even  
22 handedly as possible.

23 And there was certainly nothing in  
24 the process that would have led me to think  
25 otherwise. I mean I was interacting with an

55

1 Savitz, Ph.D  
2 advisory committee that was chaired by the Dean of  
3 the School of public health at UCLA and included  
4 other very prominent scientists from different  
5 agencies, different academic entities and so I  
6 don't -- I didn't perceive any pressure to do  
7 otherwise, but given my training and my job that's  
8 of course what I would do is do the best research  
9 I can.

10 THE VIDEOGRAPHER: Excuse me,  
11 counselor, sorry for the interruption.  
12 I just wanted to let you know you have  
13 about five minutes of videotape left.

14 MR. APRELL: Okay.

15 Q Mr. Morgan in his reply to your  
16 report noted your study founded -- found more than  
17 a twofold statistically significant 90 percent --  
18 98 percent confidence increased risk of childhood  
19 brain tumor.

20 Your expert report had stated the  
Page 47

Deposition of David Savitz

21 evidence linking extremely low frequency  
22 electromagnetic fields to childhood brain cancer  
23 has been systematically and carefully integrated  
24 by an international team of experts and no support  
25 whatsoever has been found for an association.

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1 Savitz, Ph.D

2 Are those two statements compatible?

3 A I think they are in that -- there  
4 are two different issues. One is what did a  
5 particular study, you know, published in 1988 or  
6 whatever, what did that study find and I think I  
7 characterized that accurately.

8 And then there is a question of  
9 where do we stand now given the subsequent series  
10 of studies that have been done. Many of them  
11 bigger and better than what I was able to do and  
12 that's not being modest. That's the nature of the  
13 scientific process is that we did better than  
14 Wertheimer and Leeper and there was a series of  
15 studies that did much better than we did.

16 And so in making the overall  
17 judgment there comes a point at which I am  
18 comfortable acknowledging that the newer evidence  
19 swamps out the older evidence in terms of the  
20 overall weight of it, as I said, by study size, by  
21 credibility, by the quality of the research that  
22 when you look in the aggregate, yes, it's not --  
23 there are certainly individual findings that go  
24 the other way, but any sort of an overall judgment



25 Deposition of David Savitz  
has to be just that. It has to take the whole

1 Savitz, Ph.D  
2 picture into account and I'm comfortable that the  
3 current body of evidence does not provide support.  
4 Q So you -- is it your opinion that  
5 it's safe to put a house or school underneath  
6 power lines?

7 A Again, that's not -- that's not a  
8 scientific question. Now we're in a purely  
9 regulatory risk assessment, risk-benefit sort of  
10 evaluation of an issue that I really don't think  
11 that I'm necessarily -- I hope I have knowledge  
12 that would be useful input to someone who is  
13 making that decision, but it's not my bottom line  
14 decision.

15 It depends on the economics and, you  
16 know, extraneous considerations and many, many  
17 other factors.

18 Q So if you have the profits of the  
19 power companies and you have a school you would  
20 have to weigh the profit of the power companies  
21 versus placing a school near power lines. Is  
22 that -- is that the type of value judgments you  
23 mean you have to make?

24 A Again, I am not in the business of  
25 making those value judgments obviously. In the

1 Savitz, Ph.D  
2 case you're referring to about the placement of a  
Page 49

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Deposition of David Savitz

3 home, and I've had over the years quite a few  
4 discussions with people who are concerned about,  
5 you know, selecting a home and buying a home and I  
6 can -- what I say to them as individual decision  
7 makers, this is not now speaking to sort of a  
8 regulatory group, a land use planning group, this  
9 is somebody that's thinking about buying a house,  
10 is that if you were to comprehensively consider  
11 all the health implications of that home I can see  
12 that the potential for magnetic fields to be a  
13 source of concern as a legitimate element on that  
14 list. Rather far down the list, way below things  
15 like being near a highway because of the  
16 pollution, way below things like having a swimming  
17 pool there that is always a risk to children,  
18 obviously, way below having multiple floors.  
19 Stairs are a concern. Formaldehyde in the carpet.  
20 You can go on and on through this list.

21                   And I don't want to say that I can  
22 flatly negate any possibility, but I'm saying that  
23 an overall judgment has to just be that, for an  
24 individual and for society.

25                   It's a judgment and I'm not trying

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1                   Savitz, Ph.D  
2 to put weights or values on the judgment of  
3 individuals or the judgements of society about  
4 what's appropriate. I'm trying to do research and  
5 interpret research in a way that helps to inform  
6 that

Deposition of David Savitz

7 THE VIDEOGRAPHER: Excuse me,  
8 Counsel, we need to switch tapes.

9 MR. APRELL: Okay.

10 THE VIDEOGRAPHER: The time  
11 now is 11:00 o'clock a.m. This marks  
12 the ending of Tape 1. Off the record.

13 (Whereupon, at 11:00 o'clock  
14 a.m., a recess was taken to 11:07  
15 o'clock a.m.)

16 (The deposition resumed with  
17 all parties present.)

18 D A V I D S A V I T Z, Ph.D., resumed,  
19 and testified further as follows:

20 THE VIDEOGRAPHER: The time  
21 now is 11:07 a.m. This marks the  
22 beginning of Tape 2. On the record.

23 BY MR. APRELL:

24 Q Dr. Savitz, I kind of -- I'm kind of  
25 all over the place, but you'll have to forgive me.

1 Savitz, Ph.D

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2 Why do you think you were selected  
3 as a witness in this case given the bulk of your  
4 research?

5 MR. CAMPBELL: Objection.

6 Calls for speculation.

7 A I would again maybe like to think  
8 that I'm both knowledgeable from having been  
9 working in the area and, you know, for some time  
10 and both doing my own work and doing reviews, and  
11 that I'd also like again to think that it's some

Deposition of David Savitz

12 reputation for being even handed and objective.

13 Q You said that the -- going back to  
14 whether or not extremely low electromagnetic  
15 fields is toxic or is harmful, you said that  
16 there's no evidence.

17 Why did the IARC declare ELF a Class  
18 2B carcinogen?

19 A Again, I'm aware of their judgment  
20 about that. I honestly don't -- I've not looked  
21 into how they sort of arrived at that decision.  
22 It surprised me. But it also -- again, I don't  
23 remember what year that occurred, but if I was  
24 sort of tracing the time course of the evidence it  
25 looked more positive early on than it did as the

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1 Savitz, Ph.D

2 more studies accumulated. I had mentioned the  
3 study that we contributed added to the positive  
4 evidence.

5 There were some others that pointed  
6 in that direction, but then through a series of  
7 very large, very well done studies the sort of the  
8 trajectory of the information it became less  
9 supportive over time.

10 Q What about all the children I've  
11 heard of getting brain tumors that live near these  
12 power lines?

13 MR. CAMPBELL: Objection.

14 Assumes facts not in evidence.

15 Q How can you -- how can you call this

16                   Deposition of David Savitz  
17    technology safe when we have these kinds of  
18    results?

19                                   MR. CAMPBELL:   Same objection.

20                   A        Again, I haven't said whether the  
21    technology is safe or not.  I think if you're  
22    asking the question about why there would be again  
23    children who have higher exposure let's say that  
24    live near power lines and develop brain tumors, of  
25    course that occurs and sadly it obviously whenever  
   it occurs whether they are near the power lines or

1                                   Savitz, Ph.D  
2    not it's a very serious health problem.

3                                   But the question as an  
4    epidemiologist is whether the power lines had some  
5    causal impact on that.  Whether they altered the  
6    risk and that's obviously a challenging question  
7    to answer, but that's -- again, that's what we do.  
8    That's what we do is try to address exactly those  
9    kinds of questions.

10                   Q        You are aware that your opinions  
11    have a far reaching effect for millions of people  
12    quite frankly and what you say results in end  
13    results.  You're -- are you aware of that?

14                                   MR. CAMPBELL:   Objection.

15                                   Lack of foundation.

16                   A        I -- you know, I, as I said, maybe I  
17    would like to believe that I have some, you know,  
18    reputation for being reasonably knowledgeable and  
19    reasonably objective.

20                                   I also hope that it's clear that I

Deposition of David Savi tz

21 have sufficient modesty not to try to deliver sort  
22 of bottom line evaluations. I -- again, if I  
23 think of the way that I have influence I would  
24 like to think it's as part of a collection of  
25 experts who evaluate and make judgments on various

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1 Savi tz, Ph. D

2 expert committees.

3 And I think there's a -- my own view  
4 is, is you really need a group sort of to make  
5 these very broad judgments about what's the right  
6 thing to do.

7 Q Groups such as EPRI?

8 A I'm thinking of it not so much in  
9 terms of the sponsorship, as a constellation of  
10 people with the right expertise.

11 Epidemiology, I certainly defend it  
12 as being very much a part of the needed expertise  
13 along with engineering, biophysics and policy  
14 analysis and perhaps ethics and legal experts and  
15 so on, but there's this judgment about what is  
16 safe and what isn't safe.

17 These very broad questions you're  
18 asking or raising really to me at least are --  
19 require -- I think it's unwise to give sort of off  
20 the cuff casual answers. Those are very  
21 complicated questions for society and deserve  
22 serious attention of the right team of experts to  
23 make the best judgments.

24 Q So you have a high, real high duty

25 Deposition of David Savitz  
in the public health sector to really look after

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1 Savitz, Ph.D  
2 people's health, so that -- that -- scratch that.  
3 Are you aware that Leeka Kheifets  
4 voted for ELF -- EMF as a Class 2B?

5 A Again, I don't know for a fact if  
6 that's the case, but if it was I wasn't aware of  
7 it.

8 Q Do you know her?

9 A I know Leeka Kheifets very well.

10 Q What are your view of her  
11 capabilities in epidemiology?

12 A I think she's a very thoughtful,  
13 well-informed epidemiologist on these issues. I  
14 worked with her directly or indirectly for quite a  
15 long time and again I have continued to  
16 collaborate and be involved with her and I think  
17 she's again a very thoughtful, knowledgeable  
18 person.

19 Q So you hold her up in the same  
20 regard as you do Mr. Ahlbom?

21 A I don't -- I don't sort of put them  
22 on the higher and lower scale. I certainly can  
23 say that they are both among the people who I look  
24 to as having really a strong sort of overview of  
25 this line of research.

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1 Savitz, Ph.D

2 There are certainly several others  
Page 55

Deposition of David Savitz

3 that I'd put in that group, but those are  
4 individuals whose opinions I would very much  
5 respect and value.

6 Q Along with Mr. Shuz, is that his  
7 name. He designs many of these studies?

8 A I don't know him personally and so I  
9 don't have as much of a sense about that. It's  
10 really more the people that I have interacted with  
11 through committees like ICNIRP and others.

12 Anthony Swerdlow, Maria Feychting.  
13 Those are people that I have said -- Adele Green.  
14 Those are people I've spent extended periods of  
15 time with talking about those issues.

16 Probably add to that if you want  
17 Martha Linet at the National Cancer Institute.  
18 It's not -- you just indicated it's not that I --  
19 it's not a short list of a few people that I think  
20 are helpful in this area. I think there's a fair  
21 number who have really very -- have really thought  
22 these things through and have insight.

23 Q Turning to Exhibit 27, your expert  
24 statement, Page 2, Paragraph 5d. That's the  
25 Loomis and Savitz Mortality From Brain Cancer and

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1 Savitz, Ph.D  
2 Leukemia Among Electrical Workers?

3 A Yes, sir.

4 Q Did this study find that the risk of  
5 death increased yearly by three percent per  
6 microtesla. I think that's per year.



Deposition of David Savitz

7 MR. MORGAN: Microtesla year.

8 Q Microtesla year exposure for  
9 electric utility workers who have been exposed for  
10 more than 20 years.

11 I can restate that, if you wish.

12 A I don't recall the quantitative  
13 details of that.

14 Overall I do recall of course that  
15 we found that evidence that supported a  
16 relationship between magnetic field exposure and  
17 brain cancer mortality.

18 MR. ABRELL: Can we have the  
19 exhibit stamp stack. Can we go off  
20 the record.

21 THE VIDEOGRAPHER: The time  
22 now is 11:17 a.m. Off the record.

23 (Whereupon, at 11:17 o'clock  
24 a.m., a recess was taken to 11:27  
25 o'clock a.m.)

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1 Savitz, Ph.D

2 (The deposition resumed with  
3 all parties present.)

4 D A V I D S A V I T Z, Ph.D., resumed,  
5 and testified further as follows:

6 THE VIDEOGRAPHER: The time  
7 now is 11:27 a.m. On the record.

8 (Document entitled Declaration  
9 of Conflicts of Interest was marked  
10 as Deposition Exhibit No. 29 for  
11 identification, as of this date.)

Deposition of David Savitz

12 Q Dr. Savitz, you had mentioned you  
13 have a lot of respect for Maria Feychting.

14 A Feychting.

15 Q Feychting. Are you aware of this  
16 document marked Exhibit 28?

17 MR. CAMPBELL: We already have  
18 a 28. This will be 29.

19 MR. APRELL: We do?

20 MR. CAMPBELL: Yes, 28 was the  
21 1394 press release.

22 A I have not -- I have no firsthand  
23 knowledge of these various roles.

24 Q So do you -- does this change your  
25 opinion of Ms. Feychting?

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1 Savitz, Ph.D

2 A I need a minute to read this over.

3 MR. CAMPBELL: There's a  
4 printing problem.

5 MR. APRELL: It's all the  
6 same. That's the best we got.

7 A I can't read the continuation. I  
8 can read the first page obviously, but --

9 Q It's essentially stating she's got a  
10 conflict of interest.

11 Does that --

12 MR. CAMPBELL: Well, I'm going  
13 to disagree with that characterization  
14 to the extent it's not part of the  
15 record.

Deposition of David Savi tz

16                   A       I don't see anything here at least  
17 on the pages just describing the research and  
18 advising she does.

19                   Q       Very well. I just want to make you  
20 aware of that.

21                               Now, going back to Paragraph 2, Page  
22 5 of your report, in the Loomis, Savi tz paper was  
23 there a statistically significant increase of risk  
24 of brain cancer with five to less than 20 years of  
25 exposure?

Savi tz, Ph.D

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1

2                   A       I don't remember that particular  
3 number off the top of my head.

4                               I do remember as I said that there  
5 was an association found between estimated  
6 magnetic field exposure and brain cancer  
7 mortality.

8                               MR. APRELL: Are those the  
9 exhibits, Bruce?

10                              MR. CAMPBELL: Yes. That's 1  
11 through 20.

12                              MR. APRELL: Can you give Dr.  
13 Savi tz the reply of Lloyd Morgan?

14                   A       No. 17; correct?

15                   Q       I'm not sure.

16                              MR. CAMPBELL: Is that  
17 Mr. Morgan's reply?

18                              THE WITNESS: Yes.

19                   Q       If you turn to Page 3, Paragraph --  
20 Page 3 you'll see -- Page 2, Paragraph 5. Is

Deposition of David Savitz

21 there any reason that you would have to believe  
22 that these calculations are inaccurate?

23 A I've honestly not gone over them to  
24 compare them to the published papers, but at a  
25 glance I have -- I'm assuming again that they were

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1 Savitz, Ph.D  
2 transcribed properly, but I don't know that for a  
3 fact.

4 Q Turning to your declaration at  
5 Paragraph 5, Page 3, Paragraph 5f. Mr. Morgan in  
6 his reply to your expert report found -- stated  
7 that your study found nearly a doubled risk of  
8 childhood cancer with a 98 percent confidence that  
9 this was not due to chance, a nearly -- a nearly  
10 tripled risk of childhood leukemia with a 99.9  
11 percent confidence and a twofold, two and a half  
12 fold risk of brain tumors with a 99.9 percent  
13 confidence.

14 A I'm not sure where you're reading  
15 now.

16 Q This is Savitz and Kaune, 1993.

17 A Which paragraph?

18 Q 5f.

19 MR. CAMPBELL: Is that from  
20 Dr. Morgan's or Mr. Morgan's reply?

21 Q No, Paragraph 5f. Yes. In  
22 Mr. Morgan's reply on Page 3.

23 MR. CAMPBELL:

24 So it would be Exhibit 17, Page 3.

25

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1 Savitz, Ph.D

2 Q Does this study, this Savitz and  
3 Kaune study contradict your assertions in your  
4 expert report?

5 A No, it doesn't. As I indicated  
6 before, these are isolated findings and again we  
7 happened to be the lead investigator and as we  
8 said at the time that it added evidence that was  
9 supportive of a possible adverse effect of  
10 magnetic fields.

11 But there have been a series of  
12 perhaps maybe as many as, I don't have the exact  
13 count, maybe a dozen new studies that followed  
14 that one that had varying strengths and  
15 weaknesses, but that certainly were markedly  
16 improved in many ways.

17 And in looking at that evidence  
18 cumulatively and in considering the methodologic  
19 limitations of our study as well as the others,  
20 the overall judgment is that there is not support  
21 with the exception I noted in the declaration that  
22 there, at measured magnetic field levels that are  
23 in the higher end, very high end of the  
24 residential exposure distribution, on the order of  
25 .3 or .4 -- excuse me, .4 microtesla there is some

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1 Savitz, Ph.D

2 consistent support for an association.

Deposition of David Savitz

3 (E-mail from Dr. Baan was  
4 marked as Deposition Exhibit No. 30  
5 for identification, as of this date.)

6 MR. ABRELL: What are we up to  
7 now, 30?

8 Q I'll show you what's marked Exhibit  
9 30. If you would go down to the -- are you  
10 familiar with this letter from Dr. Baan?

11 A No, I'm not.

12 Q Can you go down and begin reading  
13 where it says so to the classification 2B and read  
14 that sentence, please?

15 A Sure. So the classification 2B,  
16 possibly carcinogenic, hold for all types of  
17 radiation within the radiofrequency part of the  
18 electric magnetic spectrum, including radiation  
19 emitted by base station antennas, radio/TV towers  
20 radar, Wi-Fi, smart meters, et cetera.

21 Q Do you agree or disagree with that  
22 statement. Do you know -- do you know Dr. Baan?

23 A I've even met him. I don't know him  
24 well. I served on previous IARC monograph  
25 committee meeting and met him there.

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1 Savitz, Ph.D

2 I'm sorry, you had another question  
3 before.

4 Q Yes. Do you agree with that  
5 statement that you just read on the record?

6 A Well, it's really, what he's stating

7 is that their assignment and interpretation as 2B  
8 holds -- he's giving the scope of what their,  
9 they, IARC's judgment pertained to.

10 And I have no independent opinion.  
11 Again, they were the ones that were -- were --  
12 sort of, you know, defined the charge to the  
13 committee and are in the best position presumably  
14 to speak to what the intended inference was, what  
15 they -- what they say it means, and I have no  
16 reason to of course second guess that.

17 Q So would you agree with that  
18 statement?

19 A I am -- again to clarify, I'm  
20 accepting that they are explaining what they meant  
21 and so I have no reason to, you know, argue with  
22 what they meant.

23 It doesn't mean I agree with the  
24 inference. It means only that they are the ones  
25 who are explaining what that judgment pertains to.

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1 Savi tz, Ph. D

2 Q So you are a member of IARC and can  
3 you state what that acronym is?

4 A IARC, I-A-R-C, stands for the  
5 International Agency for Research on Cancer and  
6 I'm not a member of that in any sense.

7 When they review research and issue  
8 monographs pertaining to what agents may or may  
9 not cause cancer they convene working groups of  
10 scientists from around the world and I was just  
11 saying that I had been a part of a previous round

Deposition of David Savitz

12 of review that way. Only once, but they had asked  
13 me and I was willing to work with them.

14 Q And when did your work begin with  
15 them and is it continuing?

16 A I think it began, I mean it didn't  
17 last very long. It was I think, I'm going to say  
18 2009. Maybe somewhere in that range.

19 Q You began?

20 A It began and ended. It was a short  
21 stint.

22 Q Okay. What monograph topic did you  
23 serve on and what was the monograph's findings?

24 A The overall topic was -- it was an  
25 updating of the whole series of monographs and so

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1 Savitz, Ph.D

2 they were going through a number of different  
3 potential carcinogens and basically trying to  
4 update the information and the evidence.

5 My area that I was focusing on was  
6 mineral oils and cutting oils that are used for  
7 industrial operations that --

8 Q Like diamond chips in them or  
9 something?

10 A No. No. Just the material itself.  
11 The exposure to the oil which has been known  
12 historically to cause skin cancer and it was  
13 updating the evidence on the carcinogenicity of,  
14 let's just say, mineral oils. That was my main  
15 piece of the territory.



Deposition of David Savitz

16 Q Okay. Now, Mr. Kaune, he's also a  
17 member of EPRI; isn't that correct, a long-term  
18 employee?

19 A It's pronounced Kaune, K-A-U-N-E.

20 Q Thank you.

21 A And he has over the years done work  
22 on and off that's sponsored by EPRI. There's not  
23 a membership that's in it or he's not in it.

24 He's done work that's also sponsored  
25 by the National Institutes of Health. He's done

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1 Savitz, Ph.D

2 work sponsored by the New York State Power Lines  
3 Project. He worked for many years at Battelle in  
4 Richmond, Washington, and worked as a private  
5 consultant for quite a few years as well.

6 Q Just in general regarding on Page 3  
7 of your expert report, Paragraphs b., c., e., g.,  
8 h., i. and j., in each of those studies you found  
9 significant risk except for in -- scratch that.

10 Paragraph -- in your expert report,  
11 Paragraph -- Page 3, Paragraph 5e., the Savitz, et  
12 al., children's case control study of prolonged  
13 exposure to 60 hertz magnetic field found a two  
14 and a half fold risk of childhood brain cancer  
15 with a high probability equivalent to one chance  
16 in one thousand that this was not a random result;  
17 is that correct?

18 A I'm not sure which -- what you're  
19 referring to.

20 Q I'm referring to your study in  
Page 65

Deposition of David Savitz

21 Paragraph 5e.

22 Are you familiar with -- are you  
23 familiar with that that found a 2.5 fold increase  
24 in brain cancer?

25 MR. CAMPBELL: Objection.

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1 Savitz, Ph.D

2 Assumes facts not in evidence.

3 A I'd have to look, again look at the  
4 paper and sort of see which particular. That  
5 generated a lot of different findings. We looked  
6 at several different appliances and several  
7 different forms of cancer. So again I don't, you  
8 know, I'd have to see the particular findings.

9 Q We'll do our best to get those after  
10 lunch.

11 A Okay.

12 Q So you're not familiar -- you didn't  
13 have a recollection of those types of studies.  
14 I'll move on if that's the case.

15 A No, I am familiar broadly with the  
16 findings, but in each of these papers we generate  
17 a wide array of data. That's the nature of these  
18 kind of studies.

19 It's not a single number that the  
20 study produces and even though I do recall the  
21 gist of what was found it, you know, I don't of  
22 course have recall of table of results and, you  
23 know, there often will be isolated findings that  
24 point in one direction, but the overall body of

25 Deposition of David Savitz  
the data points in another direction.

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1 Savitz, Ph.D

2 And so it's the -- I remember  
3 certainly the bottom line as sort of take home  
4 message at least I saw from those studies, but not  
5 the individual quantitative results; not each  
6 individual estimate that is in the papers.

7 Q We'll come back to that.

8 A Okay.

9 Q You say that your next major -- turn  
10 to Page 4 of your expert report. Your next major  
11 study, what's the cite for this and why would you  
12 not cite that?

13 A There may be a little bit of a  
14 citation problem here that under five which refers  
15 to the work done by the New York -- supported by  
16 the New York State Power Lines Project, that would  
17 be 5a., 5b., 5e., and 5f.

18 Q Okay.

19 A Under six which is the study of  
20 electric utility workers supported by EPRI.

21 Q Okay.

22 A That would be for 5g., h., i., and  
23 j.

24 Q So Paragraph 6 refers to the EPRI,  
25 essentially studies the studies that you had just

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1 Savitz, Ph.D

2 previously cited?

Deposition of David Savitz

3 A That's correct.

4 Q So is it a bit misleading that you  
5 would state that your next major study when you  
6 had just referred to the other studies, does that  
7 seem a bit misleading that the court is going to  
8 read this and think that you had a next major  
9 study?

10 A Again I think there's an editorial  
11 source of confusion there. I'm not sure it's  
12 misleading, but I don't know what the mechanism is  
13 for -- for clarifying that. But again some of the  
14 papers cited under five pertain to the childhood  
15 cancer study and other papers under five pertain  
16 to the electric utility workers study.

17 Q Thank you. Turning to Page 4.  
18 Paragraph 8, it says that you have served for the  
19 past ten years as a member of the Epidemiological  
20 Committee of the International Commission on  
21 Non-Ionizing Radiation, an organization supported  
22 by the European Union.

23 I would like you to turn to -- are  
24 you familiar with the book by Devra Davis called  
25 Disconnect?

1 Savitz, Ph.D

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2 A Not -- I know of its existence. I  
3 have not read it.

4 Q Could you turn to Page 4 of the  
5 reply of Lloyd Morgan?

6 A Okay.

7 Q And if you could begin reading where  
8 it says ICNIRP while pretending to contrary  
9 receives industry funding down to the end of the  
10 quote there. If you could read that.

11 A The paragraph that follows that  
12 statement?

13 Q Yes. Right here, sir. From here to  
14 here.

15 A Okay. "ICNIRP is not directly funded  
16 by industry, but a project with which half of its  
17 members are tied has had substantial financial  
18 backing from the Royal Adelaide Hospital of  
19 Australia. One might not think at first glance  
20 that a hospital may be a conduit for passing money  
21 along, but in fact the cell phone industry for  
22 many years provided several hundred thousand  
23 dollars to the hospital which passed it on to the  
24 WHO electromagnetic field, WHO EMF project.

25 "Over the years the WHO EMF project

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1 Savi tz, Ph. D  
2 evaluated cell phone risks and provided other  
3 advice to ICNIRP regarding electromagnetic and  
4 cell phone radiation." Devra Davis, Disconnect,  
5 Dutton Penquin Group (USA) Inc. New York, Page 48.

6 Q Thank you. Is there any reason for  
7 you to disagree with that?

8 A I have no firsthand information to  
9 comment on that.

10 Q Are you familiar with the Royal  
11 Adelaide Hospital in Australia and Mr. Repacholi's

Deposition of David Savitz

12 involvement --

13 A I'm not.

14 Q -- with that hospital?

15 A I'm not familiar with that hospital,  
16 no.

17 Q And so Mr. Repacholi is associated  
18 with that hospital and he was also the founder of  
19 ICNIRP.

20 Are you aware of those facts?

21 MR. CAMPBELL: Objection.

22 Assumes facts not in evidence.

23 A Again, I have no information on  
24 that.

25 Q What's your opinion of

82

1 Savitz, Ph.D

2 Mr. Repacholi?

3 A I don't have much of a basis. I'm  
4 just trying to think when we interacted some years  
5 ago. I am trying to think about, you know,  
6 whether -- I don't have any -- I don't really have  
7 a firsthand knowledge or opinion of his work. I  
8 remember him being, you know, a very pleasant  
9 person, but that's about the extent of it.

10 Q Are you aware that he's been under  
11 quite a bit of criticism from people in groups  
12 from time to time?

13 MR. CAMPBELL: Objection,

14 vague. Assumes facts not in evidence.

15 A No, I am not.

Deposition of David Savitz

16 Q Going down to Paragraph 8, and I'm  
17 going to read from your expert report Paragraph 8  
18 in the middle. The committee has received,  
19 talking about ICNIRP, the committee has more  
20 recently focused on radiofrequency radiation from  
21 mobile phones, considering both transmission  
22 towers and individual phone use.

23 It would appear that this statement  
24 contains a fallacy in that Plaintiffs' expert --  
25 I'm sorry.

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1 Savitz, Ph.D

2 And if you turn to Page 14 of your  
3 expert report you state that WI-FI in schools  
4 constitutes a distinctive pattern of exposure, and  
5 in Paragraph 36 you state that the distinctive  
6 exposure pattern associated with WI-FI. Yet here  
7 in Paragraph 6 you refer to transmission towers  
8 and individual phone use.

9 A I'm sorry, I'm not following. You  
10 said Paragraph 36?

11 Q Yes. Paragraph 14 you state WI-FI  
12 in schools constitutes a distinctive pattern of  
13 exposure.

14 A Okay.

15 Q And then again on Paragraph 36 you  
16 say the distinctive exposure pattern associated  
17 with WI-FI.

18 A Okay.

19 Q Yet here at Paragraph 6 you refer to  
20 transmission towers and individual phone use.

Deposition of David Savitz

21 A Paragraph 6 is pertaining --  
22 Q I'm sorry, Paragraph 8.  
23 A Okay.  
24 Q So there you're considering about  
25 the transmission towers and individual phone use?

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1 Savitz, Ph.D

2 A Right. I need to -- again I guess  
3 we still don't have a copy of my CV, but there --  
4 there may be a problem in the citation in that and  
5 again I apologize for that, but I mentioned there  
6 are four papers that had come out from my work  
7 with the ICNIRP Epidemiology Committee.

8 There's one missing in there which  
9 is a more methodologic review before we did the  
10 review of the individual studies that precedes the  
11 2009 paper that did include an evaluation of the  
12 transmission towers literature.

13 You're correct that the paper cited  
14 there in Epidemiology in 2009 pertains only to  
15 mobile phone use, not to the transmission towers,  
16 but again a preceding paper of the same group did  
17 address transmission towers.

18 Q But it says that there the committee  
19 ICNIRP is more recently focused on radiofrequency  
20 radiation from mobile phones, considering both  
21 transmission towers and individual phone use, but  
22 yet you say that -- how is that -- how does that  
23 hold up when or how can you justify that  
24 statement, but yet your statements that WI-FI in



25                                   Deposition of David Savitz  
schools constitute a distinctive pattern of

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1                                   Savitz, Ph.D  
2 exposure if the ICNIRP committee is considering  
3 both transmission towers and individual phone use  
4 when they consider radiofrequency radiation from  
5 mobile phones?

6                   A     I don't -- I don't understand  
7 actually the perceived contradiction there, but  
8 again I have explained what the committee was  
9 doing was addressing radiofrequency radiation  
10 broadly and then WI-FI as a particular form that  
11 obviously we're talking about here. I don't, as I  
12 said, I may be missing something. I'm just not  
13 seeing a contradiction there.

14                  Q     I'm come back to that.

15                               That study there was an Ahlbom  
16 study, correct, on Paragraph 8, the committee has  
17 more recently focused, that you cite an Ahlbom  
18 study there?

19                  A     Yes, that's correct.

20                  Q     But you're not aware that a Swedish  
21 investigative journal disclosed that he had a  
22 conflict of interest, was summarily removed of the  
23 committee, as chairman of the epidemiology  
24 subgroup of the International -- of IARC's expert  
25 workshop and was told that he could only attend as

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1                                   Savitz, Ph.D  
2 a non-voting expert. You're not aware of that?

Deposition of David Savitz

3 MR. CAMPBELL: Objection,  
4 assumes facts not in evidence. Asked  
5 and answered.

6 A I had -- I had again found out when  
7 he was going to be on the IARC committee and then  
8 I had heard that he had been taken off of the IARC  
9 committee, but that's all that I -- and again that  
10 was secondhand in the sense of sort of hearing it  
11 from others.

12 Q But you hold great weight to his  
13 studies and him to this day; is that correct?

14 A Yes, I do.

15 Q Have you worked with him since May  
16 of last year on any projects?

17 A No.

18 Q No collaboration whatsoever?

19 A We have not -- no. Really the work  
20 together on the ICNIRP committee was the last of  
21 that.

22 I'm sure we -- I as a journal editor  
23 have saw his opinion as referee and there have  
24 been some sorts of indirect exchanges, but nothing  
25 that I would call a collaboration in that time.

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1 Savitz, Ph.D

2 Q So you -- what kind of -- what kind  
3 of work you're refereeing. He's reviewing your  
4 studies?

5 A No. Again, it's as a journal editor  
6 when we receive a manuscript I solicit expert

Deposition of David Savitz  
7 opinions about various manuscripts that come in  
8 and it seems likely, quite possible that I sought  
9 his opinion one time or another, you know, as an  
10 expert in environmental epidemiology broadly.

11 Q Since May of 2011?

12 A I honestly don't -- I don't remember  
13 for sure, but that's certainly possible. I don't  
14 have a detailed listing of who I've sought.

15 Q Well, given that you -- we'll  
16 presume as you don't know that he was removed from  
17 the panel or committee would that affect your  
18 judgment in collaborating with him in the future?

19 MR. CAMPBELL: Objection.

20 Assumes facts not in evidence.

21 A You know, I know him well  
22 personally. I know of his work. I've had the  
23 chance to interact with him. I think that I'm --  
24 yeah, I'm comfortable in my -- my firsthand  
25 impression that would sustain the view that he's

1 Savi tz, Ph.D  
2 capable of an objective scientist. He's always  
3 been.

4 He's been among those who really  
5 opened this avenue up and was very forceful in not  
6 just doing work, but in really defending the  
7 legitimacy as a field of inquiry when people were  
8 extremely skeptical about whether there was even a  
9 question to be asked.

10 And he's been among those who's  
11 always been supportive of the argument that

Deposition of David Savitz

12 there's a very legitimate question to be asked and  
13 we need to do the research that would address it.  
14 So I don't have any reason to, you know, to change  
15 that judgment.

16 Q Were you aware of the resultant  
17 resignation of Ahlbom from the Swedish Radiation  
18 Protection Board?

19 A Again, I have no firsthand  
20 information on that.

21 Q Would that affect your judgment in  
22 associating and collaborating with him in the  
23 future if that were to be true?

24 A No. I mean my desire to collaborate  
25 would be based on the -- his intellectual talents

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1 Savitz, Ph.D

2 and his ability to contribute to the task at hand.

3 I don't see that these -- again, you  
4 know, these kind of perceptions or these claims of  
5 bias they haven't, you know, they just have not  
6 had any bearing on the direct interaction or on  
7 the quality of the work.

8 Q Aren't you concerned that it will  
9 affect your reputation?

10 A No, not at all.

11 Q Not at all?

12 A I work with people in -- all who  
13 bring all kinds of different perspectives and  
14 backgrounds to the table. People who are active  
15 environmentalists and people who are, you know,

Deposition of David Savi tz  
16 have very different -- it's sort of -- it's -- one  
17 of the advantages of working in groups is that we  
18 even out each other's biases and weaknesses.

19 That when you have a group of people  
20 one person may lean one way or another and that's  
21 one of the reasons groups do better than  
22 individuals in making judgments.

23 Q Are you familiar with this book?

24 A Yes, I am. I wrote it.

25 Q Could you read into the record the

90

1 Savi tz, Ph. D

2 paragraph that's highlighted?

3 A This -- starting?

4 Q Right here.

5 A Although it may sound obvious it is  
6 only the quality of the data that counts. This  
7 issue arises in considerations of disclosure of  
8 financial support for research that may bias the  
9 investigator, Davidoff, et al., 2001.

10 The interpretation of database on  
11 the intent or preconceptions of the Investigator  
12 Savi tz and (inaudible) 1995 and most insidiously  
13 when research is judged based on the track record  
14 of those who generate it. As we make use of  
15 epidemiology data inferences it is necessary to  
16 step back not only from the investigators as human  
17 beings.

18 THE REPORTER: You have to  
19 slow down.

20 THE WITNESS: Sorry.  
Page 77

Deposition of David Savitz

21 THE REPORTER: As human  
22 beings.  
23 THE WITNESS: Sorry about  
24 that.  
25 A I'll come back to that.

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1 Savitz, Ph.D  
2 Backtracking a little bit, it's necessary to step  
3 back not only from the investigators as human  
4 beings, but even from the original study goals to  
5 ask how effectively the information answers a  
6 specific question and contributes to a specific  
7 inference.  
8 Q So not just the quality of the data,  
9 but considerations of disclosure of financial  
10 support for research should be taken into  
11 consideration.  
12 Would you agree based upon your book  
13 statement here?  
14 A I had intended to almost in essence  
15 make the opposite statement, that the merits of an  
16 argument and the credibility of data depend on the  
17 quality of the methods and the quality of the  
18 data, not on the, if you will, the leanings of any  
19 particular individual or the funding agency or the  
20 economic implications. That the goal at least is  
21 to step back and reflect objectively on the  
22 quality of the evidence.  
23 Q But you agree that you point out  
24 that their financial support may bias an

25 Deposition of David Savitz  
investigator; is that correct?

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1 Savitz, Ph.D

2 A Of course a lot of things can bias  
3 investigators I think and I have made this  
4 argument and in writing and publicly before that  
5 there is a lot of concern with financial conflicts  
6 of interest, but I tend to believe that just as or  
7 more sort of insidious are people's political  
8 views, their ideology, their religion, their  
9 philosophy of life and so on just as readily and  
10 maybe more readily intrudes, our values enter into  
11 those.

12 So there's not, I think the degree  
13 of focus on financial conflict is, you know, it's  
14 understandable because it's something that we can  
15 measure, but I think that the -- again there are  
16 varying views in the field on this.

17 I tend to believe that the quality  
18 of the data and the evidence is more important  
19 than the unmeasurable intentions of those who  
20 generated it.

21 Q Have you always made sure that you  
22 and your co-authors recorded any financial support  
23 that may have biased you or your co-authors'  
24 conclusions and opinions?

25 A I've tried to comply with whatever

93

1 Savitz, Ph.D

2 the journal requirements are at a given point in  
Page 79

Deposition of David Savitz

3 time in regard to potential conflicts.

4 Q But the journal articles used to not  
5 require --

6 A That's right.

7 Q -- disclosure.

8 So that -- so you felt that you have  
9 complied with disclosure just because you complied  
10 with the journal's requirements?

11 A That's correct, yes.

12 Q And that disclosure wasn't needed in  
13 certain instances?

14 A Again, I don't remember back, you  
15 know, the way it was in the past. I mean it's  
16 pretty typical to acknowledge the funding source  
17 for the research, which funding agencies like to  
18 see that indicated.

19 But it's more recent that there has  
20 been this broader interest in other sorts of  
21 financial conflict of working as a consultant or  
22 other potential perceived conflicts of that sort.

23 Q And why do you suppose that is?

24 A I'm sorry, why do I suppose what is?

25 Q Why is there such a new urge, a new

94

1 Savitz, Ph.D

2 issue, why is that?

3 A Really you're asking sort of a  
4 societal question or a philosophical question  
5 about why this concern has arisen.

6 And again I really have no insight



Deposition of David Savitz

7 into the evolution of these issues. I can observe  
8 it. I don't have any reason -- I don't have any  
9 understanding why now and why that issue.

10 Q Why wouldn't -- why wouldn't you  
11 disclose even in your journal, in journals that  
12 make no requirements, why wouldn't you go ahead  
13 and disclose that?

14 A I don't -- I tend to think that --  
15 again I believe in complying with the regulations  
16 as they are, but I really tend to think that a  
17 focus on these issues is not helpful to evaluating  
18 the scientific quality, the evidence, what the  
19 evidence is saying. It's, if anything, tends to  
20 be I think somewhat of a distraction.

21 Q But yet they're now being required  
22 in modern journals?

23 A That's right.

24 Q So it's a distraction, you think  
25 it's a distraction?

95

1 Savitz, Ph.D

2 A I don't think it's helpful.

3 Q You don't think it's helpful?

4 A I think that the best judgement of  
5 the quality of the evidence is based on the  
6 scientific principles. I'm putting aside issues  
7 of outright data fabrication. If someone is lying  
8 obviously that's a whole different issue. But I  
9 tend to focus as singlemindedly as I can on the  
10 work and not the person who generated it.

11 There's -- if it's, again it's just  
Page 81

Deposition of David Savitz

12 sort of maybe a different view of science and a  
13 perspective on that, but that the evidence  
14 supersedes everything else.

15 Q So you don't -- you don't think it  
16 would be of the general population's interest to  
17 know whose funded these studies?

18 A Again --

19 MR. CAMPBELL: Objection.

20 Calls for speculation.

21 You can answer.

22 A I'm really not an expert in that  
23 broader framework. I'm reacting as a researcher  
24 whose trying to generate information and  
25 understand the information that's been generated

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1 Savitz, Ph.D

2 and make judgments about it and there are many,  
3 many sort of I think potential, if you will,  
4 distractions from the quality of the data that can  
5 play in.

6 MR. CAMPBELL: Shawn, when you  
7 get to a good stopping point I need to  
8 take a break.

9 MR. ABRELL: Let's do it now.

10 MR. CAMPBELL: Okay. Do you  
11 want to take lunch now?

12 MR. ABRELL: Yeah.

13 THE VIDEOGRAPHER: The time  
14 now is 12:09 p.m. This marks the  
15 ending of Tape 2. Off the record.

16 Deposition of David Savitz  
17 (Whereupon, at 12:09 o'clock  
18 p.m., a luncheon recess was taken.)  
19  
20  
21  
22  
23  
24  
25

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1 Savitz, Ph.D.  
2 A F T E R N O O N S E S S I O N  
3 January 27, 2012  
4 12:54 o'clock p.m.  
5 (The deposition resumed with  
6 all parties present.)  
7 D A V I D S A V I T Z, Ph.D., resumed,  
8 and testified further as follows:  
9 THE VIDEOGRAPHER: The time  
10 now is 12:54 p.m. This marks the  
11 beginning of Tape 3. On the record.

12 DIRECT EXAMINATION

13 BY MR. ABRELL: (Continued.)

14 Q Thanks, Dr. Savitz, for the break.

15 I just have a couple jumping back and around.

16 When we were talking about your book  
17 and financial bias and what's considered relevant  
18 in reports, in disclosure, at what point in time  
19 does it become important to a financial interest.  
20 You make -- you seem to have the opinion that it's

Deposition of David Savitz

21 always just the weight of the evidence and the  
22 study and I'm glad you point out that it's the  
23 findings of the study that matter.

24 Would you agree with that?

25 A Yes.

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1 Savitz, Ph.D

2 Q So more than the conclusion or the  
3 abstract, it's more the actual hard core data that  
4 matters.

5 Would you agree with that?

6 A I think that the way I think of it  
7 is that the methods obviously need to be described  
8 clearly so that the outside person can understand  
9 what was done.

10 The results need to be described  
11 clearly in a way the findings are clear, and then  
12 of course the interpretation, the authors get to  
13 have their shot at it and say what they think it  
14 means and it's helpful, you know, often, but I  
15 think that, you know, to the best of our ability  
16 it's important to focus on what -- how the study  
17 was done and what the results of the study were,  
18 not so much on the motivations of the authors or  
19 if they hold stock in a company or if they do or  
20 don't belong to a particular church or et cetera.

21 MR. ABRELL: Off the record,  
22 please.

23 THE VIDEOGRAPHER: The time  
24 now is 12:56 p.m. Off the record.

25

Deposition of David Savi tz  
(Discussion off the record.)

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1

Savi tz, Ph. D

2

THE VIDEOGRAPHER: The time

3

now is 12:58 p.m. On the record.

4

BY MR. ABRELL:

5

Q Thanks again, Dr. Savi tz.

6

Okay. So you just answered that

7

it's more -- well, based upon your previous answer

8

are you aware that 68 percent of funded studies,

9

industry funded studies find no risk while 68

10

percent of independent funded studies find a risk?

11

A Again I have no information to, you

12

know, corroborate or refute.

13

Q If that were true, would that --

14

strike that.

15

I guess if, you know, funding bias

16

is not really part of what you consider important

17

in a study; is that correct?

18

A Again, it's at most indirect

19

importance. If the funding, let's say biases of

20

the investigator for whatever reason affect their

21

choice of methods and if those methods are prone

22

to spurious positive or spurious negative results,

23

then I will be able to see it in their methods.

24

I won't see because of who their

25

paycheck comes from. I'll see it in the methods

1

Savi tz, Ph. D

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2

of their study.

Deposition of David Savitz

3                   And there may be, you know, that's  
4 possible, but it's not -- again it's an indirect,  
5 not a direct effect of the, of let's call it just  
6 investigator bias for now, forget broader than  
7 just funding, it's investigator preference.

8                   Q     So the methods used in a study you  
9 find very important?

10                  A     Yes.

11                  Q     And we'll get back to that.

12                         I guess at what point in time does  
13 funding bias become a problem?

14                  A     Well, again as I've said I don't  
15 think it's the funding, per se. I would rather,  
16 first of all, put it under the category of  
17 investigator bias because there really is -- there  
18 are investigators who, you know, seem to have  
19 results that consistently, say, support industry  
20 side. There are investigators who consistently  
21 seem to have results that support those who are  
22 more, you know, environmentalists for lack of a  
23 better word.

24                         So the issue is really investigator  
25 bias and I think that it's a more -- it's more

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1                                 Savitz, Ph.D  
2 helpful to examine that based on the methods,  
3 results -- and results of their paper. The  
4 interpretation maybe that they put on their  
5 results.

6                                 I think that's more informative than

Deposition of David Savitz

7 the sort of knee jerk reaction, well, they are  
8 funded by them, it must be this.

9 That's sort of a -- I think anything  
10 the value of the disclosure knowing, let's say,  
11 there's a vested interest in the study that is  
12 supporting it is to maybe just make you more  
13 vigilant about reviewing the methods, although I  
14 think you should be vigilant as I said regardless.

15 So it's a way of saying I don't  
16 think it's helpful at least to me to know, you  
17 know, who signed the check that supported the  
18 research to judge the quality of the research.

19 Q But yet you say it's important in  
20 your book?

21 A No. I said that it's important to  
22 focus on the methods and not on the intentions of  
23 investigator.

24 Again, I may have not have phrased  
25 it as eloquently as I should have, but it's not

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1 Savi tz, Ph. D  
2 what's in the, if you will, the heart or soul of  
3 the investigator, the mindset that's the issue.  
4 It's only a question what did they do good or bad.  
5 That's what I need to be concentrating on.

6 Q What if an author owns substantial  
7 stock in a funder's company would that be  
8 important. Would that finally present a financial  
9 bias that's a problem?

10 MR. CAMPBELL: Objecti on.  
11 compound.

Deposition of David Savitz

12           A     Again if I interpret it saying,  
13 let's say there's a financial, you are setting up  
14 a scenario if I understand that the investigator  
15 will gain or lose money as a function of the  
16 results of the study.

17                     Again it's a little bit hard for me  
18 to see that kind of a situation that you sort of  
19 make more money if the results fall one way or the  
20 other.

21                     I think that that may not be the  
22 best investigator to pursue that topic because it  
23 would be very difficult to approach it with  
24 objectivity, but if they're able to, you know, do  
25 a good study, it's a good study. That's all that

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1                                     Savitz, Ph.D

2 matters.

3           Q     Do you own stock in any power  
4 companies, telecommunication companies or say  
5 companies that would be contributing to EPRI?

6           A     You know, I have a diversified  
7 portfolio with a financial planner that probably  
8 includes those things and hundreds more, but I  
9 have no idea what they are.

10          Q     What's the proximate value of that  
11 portfolio?

12                                     MR. CAMPBELL: I'm going to  
13 object on the grounds that this is far  
14 beyond the scope of permissible  
15 deposition questions.



16                                   Deposition of David Savitz  
  There's no allegation here  
17                                   that Mr. or Dr. Savitz is financially  
18                                   conflicted and I think that that's not  
19                                   a permissible line of inquiry.

20                                   MR. ABRELL: I'll strike the  
21                                   question.

22                                   Q       What funds have you received over  
23                                   the length of your career from electrical power,  
24                                   telecommunications companies and/or consultants  
25                                   and legal firms representing these companies?

1                                   Savitz, Ph.D

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2                                   A       As I had said to the best of my  
3                                   knowledge the only research funding I have  
4                                   received is through the New York Power Lines  
5                                   Project and through the Electric Power Research  
6                                   Institute, EPRI.

7                                   I'm just trying -- again, you know,  
8                                   I have been in this area for a long time and I  
9                                   have not to the best of my recollection consulted  
10                                  with or received support from those companies  
11                                  other than through the mechanisms that I mentioned  
12                                  there.

13                                  Q       Okay. I'd like you to read from the  
14                                  top sentence on Page 31 from -- from your book.

15                                  A       (Even especially?) experts have  
16                                  preconceptions and blind spots and may well be  
17                                  prone to evaluating evidence based on an initial  
18                                  subjective overview and then maintain consistency  
19                                  with their initial gut impressions.

20                                  Q       Thank you.

Deposition of David Savitz

21 As an expert do you have  
22 preconceptions?

23 A I -- you know, I'm sure I must have  
24 some. I don't want to pretend that I'm somehow  
25 the lone voice of reason, but I in this particular

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1 Savitz, Ph.D

2 area I feel that I've been pretty good, as much as  
3 one person can be at approaching the evidence as  
4 it unfolds and changing as the evidence changes.

5 Again, I don't want to be  
6 sanctimonious about it and pretend that I'm sort  
7 of the perfect neutral arbiter, but I feel to a  
8 large degree I've certainly tried and I feel I  
9 have been able to react to evidence as it  
10 develops.

11 Q Would -- are you familiar with what  
12 a router is?

13 A Yes, I am.

14 Q And how does a router talk to, say,  
15 a wireless device?

16 A I mean my explanation of the  
17 engineering of that is that, you know, even going  
18 at a rudimentary level is probably making too much  
19 of a claim, that it's the signal that is  
20 transmitted that the WI-FI receiver receives.  
21 That's, you know, I don't want to try to go a lot  
22 further into technology.

23 Q So is it a radiofrequency signal?

24 A That's my understanding, yes.

25 Q Deposition of David Savitz  
And is it pulse modulated?

1 Savitz, Ph.D

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2 A I -- again I don't -- I probably  
3 should just confess the ignorance of the details  
4 of the nature of the radiofrequency signal that is  
5 used for that kind of communication.

6 Q We're talking about WI-FI in a  
7 school that deploys a particular type of  
8 communication system and you're here as an expert  
9 and you're saying you're not familiar with that  
10 technology?

11 A Let me clarify. I'm familiar with  
12 the evaluation of potential health effects  
13 associated with a variety of forms of non-ionizing  
14 radiation.

15 I don't believe that I, you know,  
16 that the -- that the generation of those fields,  
17 the way cell phones works, the way the power  
18 company delivers power and so on, I rely on other  
19 experts for that kind of information.

20 And so I am, obviously my expertise  
21 is focused on the epidemiologic work and the  
22 context for that. I'm not an expert in all  
23 aspects of the context. I'm not an expert in  
24 biophysics. I'm not expert certainly in the  
25 engineering.

1 Savitz, Ph.D

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2 What I feel I have expertise in is  
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Deposition of David Savitz

3 the evidence that directly evaluates potential  
4 health effects from these forms of exposure.

5 Q So you only have secondhand  
6 knowledge of the type of technology that we're  
7 talking about in this case?

8 A I think it's safe to say that I have  
9 to rely on reports of others, reports of other  
10 agencies, other authoritative reviewers to make a,  
11 let's say a judgment about the nature of the  
12 exposure, the extent to which exposure to WI-FI is  
13 or is not analogous to cell phones or extremely  
14 low frequency radiation.

15 You know, so that when it comes to  
16 the underlying physics of the fields or the  
17 biophysics in terms of the way tissues respond to  
18 fields and so on I am relying on the overall  
19 reports of others on that.

20 Q So when you say exposure you're  
21 talking about exposure not to the WI-FI router or  
22 something called WI-FI, but you're actually  
23 talking about the agent which is electromagnetic  
24 radiation, is that correct. The agent the router  
25 deploys which is WI-FI which is electromagnetic

1 Savi tz, Ph.D  
2 radiation pulse modulated. So you're talking  
3 about the agent, not the router or some name  
4 called WI-FI; correct?

5 A Well, the way epidemiologic studies  
6 always work is that there is almost always at

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Deposition of David Savitz

7 least there is the exposure of ultimate interest  
8 and of course in this case, in the case of cell  
9 phones, in the case of transmission towers, in the  
10 case of WI-FI the interest is in radiofrequency  
11 fields.

12 Q Correct.

13 A The operational ways that's measured  
14 are almost always indirect. How many hours do you  
15 use your cell phone. How many hours were you in a  
16 setting where hypothetically if you were going to  
17 do a study of that, how many hours a day are you  
18 in a setting where WI-FI is in use.

19 And so there is an indirectness to  
20 the things that we measure. We don't have people  
21 wearing RF meters and getting at that level of  
22 detail. We use indirect proxies, if you will.

23 Q So one of those proxies would be  
24 exposure time?

25 A Yes. That would be one of the

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1 Savitz, Ph.D

2 indicators that's often used.

3 Q And would one of those indicators be  
4 whether or not that exposure was constant or  
5 interrupted from time to time?

6 A That would be another potentially  
7 relevant aspect of the exposure.

8 Q If that agent was in this case  
9 electromagnetic fields pulse modulated, would that  
10 be a factor to consider?

11 A I think that, you know, that this

Deposition of David Savitz

12 is --

13 Q As a -- let me ask you.

14 A Right.

15 Q As an epidemiologist --

16 A Yes.

17 Q -- do you consider a pulse modulated  
18 frequency as opposed to a continuous wave as being  
19 a factor in the types of your analysis?

20 A Insofar as they can be distinguished  
21 and insofar as the experts in biophysics tell me  
22 that those are important distinctions.

23 In other words, I got to rely on  
24 both of those. That there indeed is reason to  
25 think of those exposures as different and in terms

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1 Savitz, Ph.D

2 of, you know, potential health effects, biological  
3 effects, and to the extent that there is a  
4 practical way to discriminate between them in  
5 epidemiological studies.

6 Q But it's a factor?

7 A Well, again, subject to those --  
8 again I have to rely on others to tell me based  
9 on, you know, biophysical principles should they  
10 be different, should they have difficult effects.

11 And again as I've been reading this  
12 and certainly I don't want to overstate my  
13 expertise in the biophysics, but there seems to be  
14 an ambiguity in how generalizable results are  
15 across difference forms of radiofrequency. How

16                   Deposition of David Savi tz  
relevant some exposure circumstances are to  
17 drawing inference about other exposure  
18 circumstances.

19                   Q     Now, another factor would be the  
20 intensity of the agent to which one is exposed to;  
21 is that correct?

22                   A     That's right.

23                   Q     Okay. But going back you said that  
24 you are not an expert in the physics of the agent  
25 in this case; is that correct?

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1   Savi tz, Ph. D

2                   A     That's correct.

3                   Q     Pulse modulated microwave radiation;  
4 correct?

5                   A     That's correct.

6                   Q     Then why did you state that WI-FI  
7 radiation is distinctive, distinctive from what if  
8 you have no -- no expertise in that field?

9                   A     Again, I am -- well, there are  
10 several things that I do understand about the  
11 nature and source of exposure particularly in  
12 schools.

13   And so in very basic terms an  
14 epidemiologist can appreciate, for example, there  
15 is a difference between these short-term very  
16 proximal intense exposures of the cell phone and a  
17 prolonged low level exposure that one might have.

18   So it's -- and again in very simple  
19 terms, there's a difference between transmission  
20 towers that are, let's say if they are producing

Deposition of David Savitz

21 RF fields in homes that's nighttime or 24 hours a  
22 day, it's not during the school day only. There  
23 are issues of proximity to the source.

24 I'm reasoning it based on some of  
25 what I have read, but also just an appreciation

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1 Savitz, Ph.D

2 that operationally it is difficult to say that  
3 someone is or is not exposed to Wi-Fi signal let's  
4 say during the school day than it is for these  
5 other forms that have been studied.

6 Q But really the distance doesn't  
7 really matter, does it, because if I have a really  
8 intense powerful source at a far distance we're  
9 just going to get the same amount exposure as a  
10 low intensity at a shorter distance. Would you  
11 agree, so the distance is really not a factor?

12 A I don't know that. I mean that's --  
13 we're getting now into the issue of how one  
14 extrapolates from one set of exposure  
15 circumstances to another.

16 And whenever you do that there is  
17 some, you know, there's got to be some theoretical  
18 rationale. You know, sometimes it's fairly  
19 straightforward, if we're, you know, extrapolating  
20 from higher doses of ionizing radiation to lower  
21 doses, there is a lot of biology and physics that  
22 helps us do that or if we're extrapolating from  
23 high levels of air pollution to lower levels.

24 With these kinds of physical agents



25 Deposition of David Savitz  
my understanding is that it's actually fairly

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1 Savitz, Ph.D  
2 difficult to know what is or is not an analogous  
3 exposure. Is a shorter time at a higher level the  
4 same time as a longer time at a low level. Is the  
5 waveform a critical factor or not.

6 There's so many dimensions to these  
7 physical agents that it seems at least from what  
8 I've read to make this sort of drawing of  
9 analogies a more precarious sort of process than  
10 it may be in some areas of environmental agents.

11 Q But all things being equal, all  
12 factors being equal except for distance and  
13 intensity, if we have a higher intensity at closer  
14 distance or a lower intensity at closer distance  
15 and a higher intensity at a further distance, all  
16 things being equal distance has no effect  
17 whatsoever or are you not qualified to make that  
18 judgment?

19 A If you're saying that the same  
20 exposure to the individual is produced, if you  
21 have a meter that is looking at all relevant  
22 aspects of the RF and that that meter is reading  
23 the same thing under those two circumstances, then  
24 of course then it -- then it doesn't matter.  
25 That' -- again that's as I said, that's an

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1 Savitz, Ph.D  
2 assumption basically saying the same exposure can

Deposition of David Savitz

3 come about in different ways. If it's truly the  
4 same exposure in all relevant effects, then it's  
5 the same exposure and has the same effect.

6 Q Thank you. What's -- do you  
7 understand what the magnitude of difference is  
8 between pulse modulated microwave radiation and  
9 cell phones.

10 Oh, I'm sorry, let me rephrase that.

11 What's the magnitude of difference.  
12 What magnitude of difference is there between  
13 WI-FI and cell phones. Are you qualified to make  
14 that -- give an opinion on that?

15 A Again, what I've read is that in  
16 very broad terms the cell phones tend to produce  
17 exposure that is very proximal to the site, to the  
18 point of use, relatively higher exposures that are  
19 less distributed versus WI-FI which is a more  
20 general environmental exposure at lower levels.  
21 That's a very sort of broad understanding of that.

22 Q Could you restate your answer, I'm  
23 sorry.

24 A My understanding is that cell  
25 phones, I do know that the relevant exposure is

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1 Savitz, Ph.D  
2 very proximal to where the antenna is and is very  
3 local and is -- can be relatively, and I emphasize  
4 relative to maybe WI-FI or other sources  
5 relatively more intense, but more local, WI-FI is  
6 lower intensity, but more broadly distributed when

Deposition of David Savitz

7 it's again under the right physical circumstances,  
8 the right location.

9 Q So it sounds like you have some sort  
10 of knowledge to this and can speak to it.

11 A Again, in a -- as I said, of a  
12 general nature. There -- again this was true even  
13 when we were looking at ELF that, you know, I  
14 understand the basics of where the exposure comes  
15 from and so on, but there is a lot of room for  
16 speculation about, if you will, nuances of the  
17 waveform and accompanying harmonics and all of  
18 these other sorts of, you know, dimensions of  
19 exposure that are theoretical interest, but are  
20 really not amenable to epidemiological study.

21 What we can study is exposures that  
22 people have in the real world. We can study cell  
23 phone uses, we can study transmission towers and  
24 in theory we could study people who do or do not  
25 go to school or work in an environment with WI-FI,

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1 Savitz, Ph.D

2 but we -- outside of the laboratory you can't  
3 manipulate all of these attributes of the  
4 exposure.

5 All you have is the real world  
6 circumstances that do or don't bring that exposure  
7 to occur.

8 Q So this is a yes or no question.  
9 Can you tell me what the magnitude of difference  
10 is between WI-FI and a cell phone?

11 A In quantitative terms?

Deposition of David Savitz

12 Q If you can.

13 A No.

14 Q You cannot, okay.

15 Would you expect a school child when  
16 exposed to a -- a child's exposure, would it be  
17 more from a laptop connected to a -- communicating  
18 with the wireless router or from the router  
19 which -- where would the child be exposed more?

20 MR. CAMPBELL: Objection.

21 Vague.

22 A As I understand those are the two  
23 ways in which WI-FI exposure can come about is by  
24 being proximal to the router or proximal to the  
25 receiver.

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1 Savitz, Ph.D

2 I don't know the -- again, from what  
3 I've read that I thought it was obviously  
4 dependent on the strength of the router, the  
5 proximity to the router.

6 There's a lot of factors it depends  
7 on, but that those would be the primary ways in  
8 which WI-FI would result in human exposure.

9 Q What about the intensity of the  
10 transmitter?

11 A Well, as I understand it that is a  
12 relevant determinant of that, the intensity of the  
13 signal coming from the router.

14 Q Okay. Thank you.

15 From a public health perspective

16 Deposition of David Savi tz  
would you agree that -- strike that.

17 Turn to Paragraph -- Page 10 --  
18 Paragraph 10 of your expert report. The first  
19 sentence in Paragraph 10 you speak about  
20 prevention of disease.

21 A That's correct.

22 Q Are you not worried about prevention  
23 impairments that might arise before disease?

24 A Of course. I mean, I meant that to  
25 be broadly not -- the intent there was to focus on

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1 Savi tz, Ph. D  
2 this pragmatic side of trying to uncover causes,  
3 not just for theoretical interests, but for  
4 ultimately determining better how to prevent  
5 disease and obviously I include in that other  
6 health problems that are related to disease.

7 Q And cancer would be a disease;  
8 correct?

9 A Yes, it is.

10 Q Book, please.  
11 Could you read at the bottom of Page  
12 4 what's highlighted right there?

13 A Sure.

14 Q Or Paragraph 4, I believe.

15 A Multiple experts often examine the  
16 same body of evidence and come to radically  
17 different conclusions, puzzling other scholars and  
18 the public at large.

19 Q Okay. Thank you.

20 Would financial conflicts of  
Page 101

Deposition of David Savitz

21 interest be one of the reasons for a radically  
22 different conclusion?

23 MR. CAMPBELL: Objecti on.

24 Specul ati on.

25 A I'm not sure that -- I'm really not

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1 Savitz, Ph.D

2 speaking to the motives for that. That's -- I'm  
3 not sure that's, I guess as a researcher I'm not  
4 sure that's a terribly fruitful question.

5 In fact, if you follow through on  
6 that part of the book what I'm saying is we have  
7 to distill the sources of our disagreement into  
8 the most concrete testable elements, so then we  
9 can at least agree on what research would be more  
10 definitive.

11 So it's actually trying to not even  
12 speculate. It's an endless process to speculate  
13 about why it is that you and I look at same  
14 evidence and come to different conclusions. Who  
15 knows. But if we can at least agree that we can  
16 design an experiment or a research project that  
17 will help me learn to agree with you or visa versa  
18 that's the direction that I would go trying to  
19 push in.

20 Q But yes or no, could -- could a  
21 financial conflict of interest be one of reasons  
22 for a radically different conclusion?

23 MR. CAMPBELL: Objecti on.

24 Calls for specul ati on.

25 A Deposition of David Savitz  
I think that I'm trying to

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1 Savitz, Ph.D  
2 distinguish between the investigator's subjective  
3 bias and sort of willful manipulation.  
4 And I think that it certainly makes  
5 sense to me that if someone is -- has a particular  
6 stake in the outcome that they maybe lean one way  
7 or another. I don't -- again, of course anything  
8 is possible. There's infinite variety of reasons  
9 why it is that we're not -- we don't approach  
10 issues with utter objectivity. We're human.

11 And there's a long list at least in  
12 my mind what it means to be human. We have  
13 emotions and we have friends and we have politics  
14 and all sorts of things and we have incomes, and  
15 so of course all -- if you ask me all of those  
16 potentially make us imperfect sort of arbiters of  
17 the evidence.

18 Q So the answer is yes?

19 A Yes.

20 Q Thank you.

21 Going back, all of your work was  
22 primarily in electromagnetic fields, extremely low  
23 frequencies -- I'm sorry. What relevance does  
24 that have in this case?

25 MR. CAMPBELL: Objecti on.

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1 Savitz, Ph.D  
2 Misstates the evidence.  
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Deposition of David Savitz

3           A     I've been involved with empirical  
4 research, two major studies which were focused on  
5 ELF electromagnetic fields. Other studies, for  
6 example, when we have dealt with electrical  
7 appliances. It maybe is a little more diffuse in  
8 terms of the types of non-ionizing radiation. We  
9 deal with a variety of occupations that may have  
10 different sorts of exposures.

11                     With regard to RF I have not done  
12 original data collection, but have been very much  
13 involved with synthesizing and evaluating that  
14 evidence.

15           Q     Did you discuss with -- strike that.  
16                     In the world of public health you're  
17 an epidemiologist; correct?

18           A     That's correct.

19           Q     But in considering everything  
20 toxicology is also important; correct?

21           A     In making a judgment about a public  
22 health decision or a policy judgment, absolutely.

23           Q     Okay. And public health is  
24 concerned not only about preventing disease and  
25 illness and early prevention, but it's also

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1                     Savitz, Ph.D  
2 concerned about -- it's also tries to protect  
3 against impairments, physical health impairments.

4                     Would you agree with that?

5           A     Yes, I would.

6           Q     And you would -- would you agree



Deposition of David Savitz

7 that there's many people who go home and are not  
8 exposed to pulse modulated microwave radiation  
9 when they are in their own home such as students  
10 that go home from the school, many of them are not  
11 exposed to that agent when they're home.

12 Would you agree with that, yes or  
13 no?

14 A I don't know, you know, obviously it  
15 sounds like a very reasonable assumption to make  
16 that there of course are homes that don't use  
17 WI-FI and would not be near another source of  
18 WI-FI.

19 Q Yeah. Or deck phones, smart meters,  
20 those types of the --

21 A Again, I have no idea how common  
22 that is. I mean I can't -- again, I don't know if  
23 there have been surveys done, representative  
24 surveys of the population, but it certainly sounds  
25 reasonable that people's exposure varies and some

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1 Savitz, Ph.D

2 people would have --

3 Q Are you familiar with smart meters?

4 A I am aware of their existence and  
5 I'm aware in the most general terms that they  
6 transmit information on the usage without the  
7 people having to come to the house to read the  
8 meter.

9 Q So you are not familiar with the  
10 technology that they use to transmit information?

11 A Not -- again, I know it's obviously

Deposition of David Savitz

12 a form of non-ionizing radiation, but that's all  
13 that I know.

14 Q That's all you know.

15 How about deck phones, are you  
16 familiar with that technology?

17 A Those are the cordless phones at  
18 homes you mean?

19 Q Correct.

20 A Yes, generally. Again, in very  
21 broad terms, broadly analogous to cell phones, but  
22 simply transmitting over much shorter distances.

23 Q So Page 5 and 6, Paragraph 13 you  
24 state that with regard to the possible health  
25 effects of Wi-Fi in school a study might compare a

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1 Savitz, Ph.D

2 large group of children who are taught in the  
3 classroom that have Wi-Fi with a large group of  
4 otherwise comparable children whose classrooms do  
5 not have Wi-Fi.

6 So it's your position based on this  
7 paragraph that because there has been no study of  
8 a large group of children who are taught in  
9 classrooms that have WI-FI with a large group of  
10 otherwise comparable children whose classrooms do  
11 not have WI-FI that there cannot be any definitive  
12 evidence?

13 A What I'm saying is that -- first of  
14 all, in the absence of such direct evidence,  
15 direct and I would not say definitive, but in

Deposition of David Savitz  
16 absence of direct evidence about the health  
17 experience of people with and without the exposure  
18 of interest the only possible basis for making any  
19 judgments is by extrapolating from other exposure  
20 conditions that are at least thought to be  
21 relevant.

22 That's the only -- those are the  
23 only two possibilities. If you didn't have data  
24 directly, then you have to extrapolate it from  
25 some other source.

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1 Savitz, Ph.D

2 Q So are you calling for an  
3 experimentation of school children in some school  
4 somewhere and, if so, have you -- have you sought  
5 out any funding for studies along those lines?

6 MR. CAMPBELL: Objection.

7 Compound.

8 A First, I'm not advocating, you know,  
9 for or against conducting such research. Given  
10 the question that's been posed here concerning  
11 possible health effect of WI-FI in schools, I was  
12 simply saying that the first logical place to look  
13 for an answer to that is to seek out research that  
14 has looked at the health effects of WI-FI in  
15 schools and that such research has not been done.

16 Q So you're saying you are not calling  
17 for that. Is it because it would be unethical to  
18 experiment on children with radiation?

19 A No, I'm not -- no, that's not the  
20 reason I'm not calling for it. It's in part that

Deposition of David Savitz

21 --

22 Q Would that be a reason that you  
23 wouldn't call for it?

24 MR. CAMPBELL: Objection.  
25 Lack of foundation.

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1 Savitz, Ph.D

2 A I would -- I haven't been asked  
3 until this moment, I have not thought about  
4 whether I would advocate for research on this  
5 topic or not.

6 Q Well, in your opinion would it be  
7 ethical?

8 MR. CAMPBELL: Objection.  
9 Calls for speculation. Beyond the  
10 scope of expert testimony.

11 A Again, I can judge what would be  
12 scientifically informative and I think that there  
13 would be ways if one wanted to address this issue  
14 directly that I could -- I would like to believe  
15 at least there might be ways of achieving that.

16 The general guideline for research  
17 is the -- we sort of accept exposures that are  
18 part of everyday life as a range of things that is  
19 legitimate to study.

20 That is that we study air pollution  
21 in a range that we experience. We don't expose  
22 people to hazards that they aren't already exposed  
23 to day-to-day, but we look at whether the  
24 variation in typical exposure is with any

25    Deposition of David Savitz  
variation in disease risk.

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1    Savitz, Ph.D

2    And it would seem to be, at least in  
3 the way things, you know, are at present that  
4 there would be variability in this exposure and  
5 that it would be certainly appropriate to,  
6 ethically appropriate in my view at least as a  
7 researcher to, you know, to try to, you know,  
8 consider that as part of an epidemiologic study.  
9 Whether it should be done or not is something that  
10 I'm not in a position to really advocate for or  
11 against.

12    Q        Is it there not ethical, is there  
13 not some sort of ethical code within the  
14 scientific community that you can't experiment on  
15 children without their consent. Is there no such  
16 thing?

17    A        I need to clarify. Experimentation  
18 means exposing people explicitly and solely to  
19 answer a research question. We do that in drug  
20 trials. We give some people a drug, we give some  
21 people a placebo.

22    Q        With their consent.

23    A        Of course. In observational studies  
24 of epidemiology in very simple terms we compare a  
25 bunch of smokers or non-smokers. We didn't

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1    Savitz, Ph.D

2 consent the smokers to adopt smoking. You could  
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Deposition of David Savitz

3 never do that. It would be ethically wrong to do  
4 so. We try to learn from people's experience as  
5 it is occurring in the real world now.

6 The different kind of foods, some  
7 people are obese or not obese, et cetera. Some  
8 people live near power lines and some don't. We  
9 consent them to be part of our studies. Okay, we  
10 have to ask may we interview you, may we collect  
11 blood, may we do these things as part of the  
12 research, but we don't get their consent to live  
13 the way they're living. To live in the homes they  
14 live in, to have the jobs they have, to eat the  
15 food they eat. They've made that choice or they  
16 find themselves in that exposure circumstance  
17 independent of the researchers and so as  
18 researchers then we try to learn what we can, you  
19 know, from those different circumstances.

20 Q Why would you suppose that there has  
21 been little research into whether or not WI-FI  
22 radiation causes health problems?

23 A I think that, you know, approaching  
24 it sort of now, sort of stepping back and looking  
25 at it from someone who has let's say -- you're

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1 Savitz, Ph.D  
2 asking me in essence why has this not been a  
3 higher research priority, and I think that -- I  
4 think it's in large part because of a widely held  
5 view that adverse health effects from this  
6 exposure are quite unlikely to occur based on what

7 we understand of the agent and analogous  
8 exposures.

9 So that when research agencies are  
10 setting priorities, if I were going to apply to  
11 the National Institutes of Health, let's say to do  
12 a study I would have to make the case and persuade  
13 reviewers that this is deserving of, you know,  
14 research funding and the effort involved with that  
15 and I would be competing with people who are  
16 studying phthalates in plastics, you know  
17 perfluorinated chemicals in the drinking water and  
18 I would have to make my case that WI-FI is of an  
19 urgent enough nature to justify that.

20 And I have not made such proposals  
21 or tried to do that, but I think that researchers  
22 and perhaps funding agencies, but maybe even  
23 researchers themselves have not found this to be a  
24 topic that has motivated them to investigate  
25 further.

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1 Savitz, Ph.D

2 Q Have you applied for any grants or  
3 are you concurrently conducting any research into  
4 pulse modulated microwave radiation?

5 A No.

6 Q There have been cell phone studies  
7 showing harmful effects. Cell phone radiation is  
8 microwave radiation. WI-FI radiation is also  
9 microwave radiation. It is essentially the same  
10 as radiation. The IARC declarations of a possible  
11 human carcinogen are much broader. We showed you

Deposition of David Savitz

12 -- strike that.

13 In 2001 IARC declared extremely low  
14 frequency, three ELF, three hertz to three  
15 kilohertz was a possible human carcinogen. In  
16 2011 IARC declared radiofrequency, RF three  
17 kilohertz to three gigahertz radiation was a  
18 possible human carcinogen. Microwave radiation  
19 frequencies are 300 to 300 gigahertz are within  
20 the radiofrequency range.

21 WI-FI in Portland Public Schools  
22 emits microwave radiation at 2.4 gigahertz. Cell  
23 phones emit microwave radiation typically at 900  
24 megahertz and 1,800 megahertz clear up to 2.4 --  
25 2.4 gigahertz.

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1 Savitz, Ph.D

2 So would you agree that the findings  
3 from the cell phone studies are appropriate when  
4 considering the radiation that's essentially  
5 identical to WI-FI as relevant when evaluating  
6 WI-FI radiation?

7 MR. CAMPBELL: Objecton.

8 Assumes facts not in evidence.

9 A I'm not sure where sort of to --

10 Q Well, let me just ask you this.

11 Given what you know about the cell phones, you are  
12 here as expert witness talking about the agent of  
13 pulse modulated microwave radiation. Given what  
14 you know about the cell phone studies are they  
15 appropriate to analyze the radiation coming off



Deposition of David Savitz

16 from a WI-FI?

17 A So putting aside what the -- what I  
18 think the results of those cell phone studies say.  
19 That's a separate issue; correct?

20 Q Absolutely.

21 A Whatever they say the question that  
22 I guess is that information relevant to evaluating  
23 WI-FI.

24 Q Correct.

25 A And my answer would be somewhat.

132

1 Savitz, Ph.D

2 Q Fair enough.

3 A In other words, that it's not, you  
4 know, it has aspects of it that are clearly  
5 similar and other aspects of it that are quite  
6 distinctive and there's always that judgment of,  
7 you know, how relevant is it, but it's -- it's RF.  
8 It's broadly relevant.

9 Q At the top of Page 6 of your expert  
10 report, sir, it says individual -- are you there,  
11 the top of Page 6 of your report?

12 A Yes.

13 Q It said individual reports those of  
14 experiencing health problems -- I'm sorry, strike  
15 that. Are you aware of the -- strike that.

16 Dr. Savitz, Mr. Morgan in his reply  
17 to your expert report wrote in part that WI-FI  
18 microwave radiation is not a distinct pattern of  
19 exposure. It's continuous radiates microwave  
20 radiation with a carrier frequency of 2,400

Deposition of David Savitz

21 megahertz. The recent declaration by the World  
22 Health Organization, IARC on cancer, found that  
23 radiofrequency radiation was a possible human  
24 carcinogen. IARC as the prior letter -- strike  
25 that. You answered that.

133

1 Savitz, Ph.D

2 Are you aware that microwave  
3 radiation is resonant by water molecules so it's  
4 energy is absorbed by water, vegetation and human  
5 beings who are reported to be 97 percent water.  
6 Do you have an expert opinion on that. Are you  
7 able to comment?

8 A Again, as a lay person I have, you  
9 know, that general awareness that you can  
10 obviously heat materials with microwaves, but that  
11 is about the extent of it.

12 Q Are you aware that frequencies that  
13 are used in the microwave ovens are the same  
14 frequencies that are used in the Portland Public  
15 Schools which is a 2.4 gigahertz?

16 A I wasn't -- again, I don't -- it's  
17 outside of the realm of my expertise.

18 Q You have no information -- knowledge  
19 of that?

20 A I am unaware of that.

21 Q Does that -- would that cause --  
22 give you cause for concern to know that if that  
23 were true?

24 A No. In the sense that physical

25 Deposition of David Savi tz  
agents can obviously have qualitatively different

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1 Savi tz, Ph. D  
2 properties as chemicals can as well, but it seems  
3 even again it's more obvious that with physical  
4 agents, you know, there are -- you really do get  
5 into qualitatively different biological responses  
6 at different levels.

7 It's true for noise, it's true for  
8 heat. It's true for, you know, in obvious ways  
9 for those kinds of materials, you know, physical  
10 agents. Whether it's true for non-ionizing  
11 radiation or not I don't know.

12 Q Would it -- did you read  
13 Mr. Morgan's addendums to his expert report that  
14 with the -- that found the measurements taken in  
15 the school. Were you aware that Mr. Morgan went  
16 and took radiation measurements in the school?

17 A I was aware of that, yes.

18 Q Were -- are you aware of -- that the  
19 power density measured at the Mount Tabor Middle  
20 School was about four to the --

21 (Discussion off the record.)

22 Q Were you aware that the average  
23 power density measured the Mount Tabor Middle  
24 School at about four times ten to the minus third  
25 watts per meter squared or about three times ten

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1 Savi tz, Ph. D  
2 to the minus 14 times. That means 300 billion  
Page 115

Deposition of David Savitz

3 times higher than the power density from which all  
4 life evolves. Do you agree with that?

5 MR. CAMPBELL: Objection.

6 Assumes facts not in evidence.

7 A Again, I have really no basis, I'm  
8 afraid, for commenting one way or the other on  
9 that.

10 MR. ABRELL: I'll mark what's  
11 Exhibit 31.

12 (L and S Bands Spectrum Survey  
13 was marked as Deposition Exhibit No.  
14 31 for identification, as of this  
15 date.)

16 BY MR. ABRELL:

17 Q This is a -- are you familiar with  
18 this study?

19 A No, I'm not.

20 Q Okay. This is information regarding  
21 the statement I just made. So you are not  
22 familiar with this study?

23 A No, I am not.

24 Q Thank you.

25 Turning to Page 6, Paragraph 14a.,

1 Savitz, Ph.D

2 you state in the case --

3 MR. CAMPBELL: Just to back  
4 you up just a little bit. It looks  
5 like Exhibit 31 has two separate  
6 studies. I just want to make sure if

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Deposition of David Savitz

12

Lack of foundation.

13

A I do. If there's new studies that have come out or studies that I'm unaware of.

15

Again, this was based on my knowledge of the epidemiologic literature.

17

Obviously there is always the potential for that being incomplete.

19

Q I'm going to show you what's marked Exhibits 2 and 3.

21

Are you familiar with those studies, sir?

23

A I'm familiar with Exhibit 2, not with Exhibit 3. I did read Exhibit 2.

25

Q So is it still your opinion that

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1

Savitz, Ph.D

2

there is no evidence of -- epidemiological

3

evidence whatsoever that Wi-Fi exposure is a

4

potential health hazard?

5

A Well, at least the first study is

6

not an epidemiologic study, but it's a laboratory

7

study of cells exposed to different kind of the --

8

a laboratory study of cells that are exposed to a

9

particular agent in which they, you know,

10

interpret as evidence of an effect on sperm

11

quality. It's not an epidemiologic study.

12

It's a little bit, again in terms of

13

the details of the laboratory techniques, it's

14

something that I would have to look to others who

15

know more about details, you know, these kinds of

16                                   Deposition of David Savi tz  
laboratory studies have seen in quality.

17                                   The second one, again I haven't seen  
18 this one previously. I'm hesitant to comment  
19 without actually reading it, the one --

20                   Q       So you're not -- you're aware of  
21 that study?

22                   A       No, I'm not.

23                   Q       So is it still your opinion that  
24 there's no epidemiological evidence for harm. Let  
25 me see here. That there's no epidemiological

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1                                   Savi tz, Ph.D

2 evidence whatsoever that counters the lack of  
3 biological support for a potential health hazard.  
4 So there's still no evidence whatsoever. Is that  
5 still your opinion?

6                   A       Well, as I said, first of all, I  
7 said there is no epidemiologic evidence and I'm  
8 still trying to find out if the second one is an  
9 epidemiologic study or not. The first one is not,  
10 the Exhibit 2. And, yeah, I think again these  
11 are -- these are experimental studies using either  
12 human tissue or in the case of Exhibit 3 in which  
13 again people were subjected to varying exposure  
14 conditions and given apparently certain tests.

15                                   So I don't, you know, again I would  
16 have to read through to make even some judgment  
17 about the quality of it, but it certainly doesn't  
18 to me at least provide what I think of as  
19 epidemiologic support that those exposed to WI-FI  
20 have different health experiences than those not

Deposition of David Savitz

21 exposed.

22 Q So did you not review the citations  
23 set forth in the declaration or in the Plaintiffs'  
24 declarations in support of an injunction. You  
25 didn't research those cites?

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1 Savitz, Ph.D

2 A I didn't read every single one of  
3 the citations. I focused on making sure that I  
4 was exhaustively aware of the epidemiological  
5 studies and I feel like I am in regard to cell  
6 phones and even so far as if there was any  
7 research on WI-FI, on ELF and as I've said I think  
8 that my knowledge of the laboratory research, the  
9 underlying sort of biophysics, toxicology I have  
10 relied on reviews of others for summarizing, but I  
11 have not -- I don't have the expertise to  
12 independently judge those bodies of research. I  
13 do have to rely on other experts.

14 Q In forming your opinion did you take  
15 into account studies that showed positive results  
16 in pulse modulated microwave radiation?

17 A I certainly tried to be  
18 comprehensive in my knowledge of the epidemiologic  
19 literature and certainly it includes studies that  
20 have reported such effects, absolutely.

21 (Document entitled Studies  
22 cited in Declaration of Dr. David  
23 Carpenter that do not appear in  
24 Jaucheni was marked as Deposition



1 Savitz, Ph.D  
2 of this date.)

3 Q I would like to show you what's  
4 marked as Exhibit 32.

5 Are you familiar with the majority  
6 of these studies or are you completely unfamiliar  
7 with them or what's the nature of your  
8 understanding of these studies?

9 A My understanding is that I recognize  
10 some of them as being epidemiologic studies. Many  
11 of them are laboratory experimental toxicology  
12 studies. Again there's some that I'm certainly am  
13 familiar with.

14 Q So did you take these into  
15 consideration when forming your opinions?

16 A Yes. The ones that -- again the  
17 epidemiologic studies. As I said, I would have to  
18 go through these one by one to verify that, but  
19 I'm familiar with some of these references and  
20 that those are part of the body of literature that  
21 I am familiar with and have considered in my  
22 overall evaluation.

23 Q So would you consider these well  
24 done studies?

25 MR. CAMPBELL: Objecton.

1 Savitz, Ph.D  
2 Vague.

Deposition of David Savitz

3           A     Again, it's a very broad  
4     generalization. There are -- you know, there's a  
5     lot of studies listed there, a number of them  
6     which I'm not familiar with or are not relevant.  
7                     When -- when this -- when I have  
8     been involved in reviews of the literature that  
9     this subsumes primarily through the papers written  
10    as a product of the Epidemiology Committee of  
11    ICNIRP, I know that we did consider the -- some of  
12    these listed there. The ones relevant to  
13    reproductive health. There's some that I know  
14    address cancer in relation to transmission towers.  
15    There's military workers. There's a whole range  
16    of different studies in there. They vary quite a  
17    bit in their quality.

18           Q     You just said that you have an  
19    exhaustive knowledge of cell phones studies.

20                     Are you aware of Japanese acoustic  
21    neuroma study or the Chinese study of parotidory  
22    gland study -- parotidory gland study with cell  
23    phone use?

24                     MR. CAMPBELL:   Objection.  
25                     Misstates testimony.

1                     Savitz, Ph.D

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2           A     I need -- again, I need to see the  
3    specific references and depending how recently  
4    they came out, that might not be at the time we  
5    did our review. It was -- it was a comprehensive  
6    evaluation and I'm familiar with certainly the

Deposition of David Savitz  
7 various products from the Interphone study, but  
8 there's quite a bit that has come out, a lot of it  
9 from Interphone further analysis and studies from  
10 that.

11 Q But when I say that you're not  
12 familiar off the top of your head which studies  
13 I'm speaking of?

14 A I'm not.

15 Q Is epidemiology the only valid  
16 method for making a determination as to potential  
17 risk?

18 A No, of course not. It's one of  
19 tools that are useful, but there are times if  
20 there is a compelling case based on toxicology or  
21 based on what we know by analogy we may not need  
22 direct epidemiologic study to believe that there  
23 is a hazard there. For example, a known toxic  
24 chemical, if there's another chemical that is  
25 really quite similar or if we know that one form

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1 Savitz, Ph.D  
2 of an agent is harmful we may without awaiting  
3 epidemiology assume that the other form is harmful  
4 as well.

5 Q So you don't really have an  
6 exhaustive knowledge of cell phone studies?

7 A Again, I -- if you're asking me can  
8 I say with certainty that I have read every study  
9 ever done of any aspect of cell phones and health  
10 effects, of course I can't make that claim.

11 I believe that I am familiar with  
Page 123

Deposition of David Savitz

12 everything that has come out maybe up to a couple  
13 of years ago, a year or so ago maybe and with a,  
14 you know, scattering of the for the most part of  
15 things I'm aware of studies that have come out in  
16 the last several months.

17 Q Would it surprise you if I told you  
18 the studies I've just referenced have come out  
19 within the last year and a half?

20 A Again, it wouldn't surprise me.  
21 It's possible --

22 Q But you're not aware?

23 A It's possible I have even read them.  
24 I need more information to look at the paper, see  
25 what journals they are in. I don't have that kind

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1 Savitz, Ph.D  
2 of compendium of classification. I don't have it  
3 organized to that degree.

4 MR. MORGAN: They're in my  
5 declaration.

6 Q Turning to the top of paragraph --  
7 Page 7, bottom of Page 6, you state markedly  
8 higher levels of exposure to analogous forms of  
9 non-ionizing radiation in the same general range  
10 of WI-FI including the use of cell phones, have  
11 not, in your opinion, been proven to be harmful.

12 Is that your personal opinion or  
13 your expert opinion, sir?

14 A My expert opinion.

15 Q Second paragraph on Page 8,

16 Deposition of David Savi tz  
16 Paragraph 15, second sentence you state that one  
17 of the key considerations in evaluation of  
18 epidemiologic research or other scientific  
19 disciplines, for this matter is the need for  
20 replication.

21 Isn't that really a false criteria.  
22 I mean public health is there really any need to  
23 replicate a study being that independently you  
24 can't -- it can't be replicated, so you always do  
25 similar ones so you never quite replicate?

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1 Savi tz, Ph. D

2 MR. CAMPBELL: Objecti on.

3 Compound.

4 A There is -- when I say replication  
5 there what I mean is that there needs to be  
6 studies that have addressed the same question and  
7 are able to demonstrate that the previous findings  
8 is not a result, is unlikely to be a result of  
9 random error or subtle biases and I emphasize or  
10 subtle biases; meaning that you're right, it's not  
11 technically replication in the narrowest sense of  
12 exactly the same, you know, breed of rats on the  
13 same diet in the same cages and so on.

14 But it's trying to address the  
15 epidemiologic, the same question in a similar  
16 manner as possible to see if it hold up on further  
17 assessment.

18 Q So absolute replication is not  
19 necessary?

20 A Well, corroborati on is with further  
Page 125

Deposition of David Savitz

21 studies. Again, if you take a very rigid and  
22 literal and narrow view of replication it means  
23 everything is the same.

24 Q Exactly.

25 A You can't find the same people. You

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1 Savitz, Ph.D

2 can't replay their lives. You can't -- you can't  
3 even do that with rats.

4 Q Well, your first study in Denver was  
5 a good example of --

6 A Right.

7 Q -- when you can get pretty close,  
8 but it's always not exactly similar; is that  
9 correct?

10 A There were -- again, as an  
11 epidemiologist I could give you a lot of ways in  
12 which it was different even though it was done in  
13 the same geographic area.

14 Q Exactly.

15 A It was a different time period. We  
16 ascertained all cases versus deceased cases, et  
17 cetera.

18 So it's a way of saying that the  
19 evidence from a single study ought not be relied  
20 on. It takes a body of studies to generate, you  
21 know, credible, scientifically valid inferences.

22 Q But in toxicology it can be  
23 replicated almost identical in the lab; correct?

24 A There can be -- there can be an

25 Deposition of David Savitz  
attempt to make it as analogous as possible, but

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1 Savitz, Ph.D  
2 as I said because the conditions are more  
3 controlled it is -- you can get closer to  
4 repeating an identical experiment, you know, in an  
5 identical way.

6 Q Turning to Paragraph 16. You in the  
7 last sentence, you mentioned the word association.

8 What you're really talking about  
9 there is an epidemiological study; is that  
10 correct?

11 A I meant that, when I say an  
12 association I mean a positive association, a  
13 statistical link between some exposure and some  
14 health outcome.

15 Q What about in vitro, is that a good  
16 place to find an association?

17 A You know, I meant it to be an issue  
18 in -- specifically in regard to epidemiologic  
19 studies.

20 Q So you're not taking into account  
21 any in vitro studies?

22 A That's a separate line of evidence.  
23 I'm talking now about how to make judgments about  
24 the epidemiologic literature. As we've discussed  
25 there's a -- there are other lines of evidence

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1 Savitz, Ph.D  
2 that are relevant besides just epidemiology, but  
Page 127

Deposition of David Savitz

3 this is focusing on how -- how this would be  
4 addressed using epidemiologic methods.

5 Q And when you say a report you're  
6 really talking about a study; correct?

7 A That -- again, it varies in how  
8 people present these sort of findings, but it  
9 could be a study, it could be a piece of a study,  
10 it could be just one number, but it, yeah, the  
11 unit of what is a single report mean is not -- is  
12 not necessarily consistent.

13 THE VIDEOGRAPHER: Excuse me,  
14 Counsel. I'm sorry to interrupt. We  
15 only have about five minutes of video  
16 left.

17 MR. ABRELL: Do you want to  
18 switch. Off the record.

19 THE VIDEOGRAPHER: The time  
20 now is 2:14 p.m. This marks the  
21 ending of Tape 3. Off the record.

22 (Whereupon, at 2:14 o'clock  
23 p.m., a recess was taken to 2:30  
24 o'clock p.m.)

25 (The deposition resumed with

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1 Savitz, Ph.D

2 all parties present.)

3 D A V I D S A V I T Z, Ph.D., resumed,  
4 and testified further as follows:

5 THE VIDEOGRAPHER: The time  
6 now is 2:30 p.m. This marks the



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BY MR. ABRELL:

Q If you turn to Page 11 of your expert report. It's talking about Frei and the Danish cell phone subscriber cohort study.

It says that you have reviewed specifically in preparing your report the Frei, et al., Use of Mobile Phones and Risk of Brain Tumor: Update of Danish Cohort Study; is that correct, sir?

A Yes, it is.

Q In general are you aware that the Danish cohort study excluded its heaviest users, the commercial subscribers?

MR. CAMPBELL: Objection.  
Lack of foundation.

A I'm aware that it included only individual subscribers and not corporate subscribers.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11

Savitz, Ph.D

Q Are you aware that it excluded corporate users in the unexposed group?

MR. CAMPBELL: Objection.  
Lack of foundation.

A My understanding is that it was able -- in that study they were able to assign exposure based on the timing of initial subscription to wireless service and they were comparing those who had subscribed earlier to those who had not subscribed earlier or subscribed

Deposition of David Savitz

12 later and that they were only able to do that on  
13 an individual basis based on individual  
14 subscriptions and not corporate ones.

15           And so it's -- clearly they  
16 recognized it's a limitation that they were not  
17 able to incorporate those who were using cell  
18 phones that were not registered to them as  
19 individuals, but even with that limitation  
20 withstanding that the question was were they able  
21 to make any meaningful discrimination, if you  
22 will, between those who were more likely to be  
23 exposed and those who were less likely.

24           And certainly those who have an  
25 individual subscription presumably were using it

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1   Savitz, Ph.D  
2 and had, they were able to assign those  
3 accurately. Those who were not assigned an  
4 individual subscription would include a mix of  
5 those who didn't use it at all and of course some  
6 subset that really did use it, but didn't have a  
7 subscription. They could have been borrowing  
8 their friend's phone, using a company phone.  
9 There's a lot of ways you could be in the non-use  
10 group, but end up actually being a user, but it's  
11 still -- it's a reasonable inference that those  
12 who have individual subscriptions are much, much  
13 more likely to be users than those who don't.

14           Q       Now, earlier you said you really  
15 take high value in the methods of a study?

16                   A       Deposition of David Savi tz  
                              Yes.

17                   Q       When you're determining whether or  
18 not a study is worth giving weight in the overall  
19 scheme of things. Don't you find that this is a  
20 fundamental flaw that would keep such a study from  
21 getting any weight really whatsoever?

22                   A       I would disagree with that. It's a  
23 limitation that makes it yet another imperfect  
24 study.

25                               It's one of the reasons that we look

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1                               Savi tz, Ph. D

2 to -- every study has limitations of different  
3 sorts and it's one of the reasons we look for  
4 convergent evidence if there's -- the different  
5 approaches with their different strengths and  
6 limitations is actually an advantage to the  
7 overall inference.

8                               They had a particular limitation and  
9 their inability to classify exposure in detail  
10 that way. They had other strengths of that study.  
11 It was an extremely large study and it was -- they  
12 were able to study a longer period of use than  
13 many other studies have done.

14                              And so I think of it -- you know, I  
15 don't certainly think of it as a sort of fatal  
16 flaw that negates the study. It tempers the  
17 conclusiveness of it. Again, I'm not trying to  
18 make it into a virtue. It's a limitation, but I  
19 don't see it as one that warrants the dismissal of  
20 the study and its findings.

Deposition of David Savitz

21 Q Are you aware that this study is  
22 being highly criticized around the world by the  
23 entire, well, the majority of the international  
24 community that it should be recalled?

25 MR. CAMPBELL: Objecti on.

154

1 Savitz, Ph.D

2 Lack of foundati on, vague.

3 A I am -- you know, I have not  
4 followed all the letters to the editor and sort of  
5 aftermath of that in the scientific literature.

6 I, you know, again I've read the  
7 paper a couple of times. I've commented on it to  
8 the press. I've read the editorial that  
9 accompanies it. And I think, again I don't want  
10 to hold it up as the definitive final word on the  
11 issue, but I think that what makes it valuable is  
12 it's -- it's a different design, very different.  
13 Say the Interphone study has its own strength and  
14 limitations. It's different than the simple  
15 monitoring of cancer rates over the period of cell  
16 phone use, but it's complementary in the sense  
17 that it adds information.

18 I would need to see specific  
19 criticisms and judge the merits of those to see if  
20 that would cause me to, you know, reassess my  
21 opinion.

22 Q Well, how about the fact that it  
23 didn't include any subscribers after 1996, so they  
24 were in the non-user group and is that something

25    Deposition of David Savi tz  
that might change your mind?

155

1    Savi tz, Ph. D

2    MR. CAMPBELL:    Objecti on.

3    Lack of foundati on.

4    A        They -- what they did is they  
5 didn't -- they weren't able to update use after  
6 1996, but they established the use for these  
7 earlier periods.

8    And so it's a judgment about whether  
9 those who were users early continued to use it  
10 later on. Over time of course everybody has  
11 become a user, so there is no, you know, in recent  
12 times there is no comparison to be made.

13    What they were studying was a large  
14 group of people who were more certain to be users  
15 and were longer term users and able to compare  
16 those to others and the others may well include  
17 some users that weren't identified, some shorter  
18 term users that started subscribing later.

19    So that there is a potential, right,  
20 for some dilution of whatever differences one  
21 would otherwise expect to see, but sort of bottom  
22 line is there is still a difference of exposure  
23 left, is there still a meaningful difference in  
24 exposure and from everything I've read there is  
25 still is a meaningful difference exposure across

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1    Savi tz, Ph. D

2    those groups.

Deposition of David Savitz

3 Q Didn't Frei find highly significant  
4 protection from all cancers?

5 A I have to look at the -- again the  
6 results of the individual -- the study again to  
7 see the paper that way.

8 Q So you're not that familiar with the  
9 paper then?

10 A Well, I'm not familiar with all the  
11 numbers. I'm familiar with the methods and for  
12 the essential results related to brain tumors.

13 Q So you're familiar with the methods  
14 and -- okay, scratch that.

15 Do you believe that -- do you  
16 personally believe that being a Danish cell phone  
17 subscriber provides protection from all cancers.

18 You would agree with the findings of  
19 the paper; right?

20 A I'm not sure -- I'm just not sure  
21 how to answer do I personally believe. I don't  
22 have any personal views about that.

23 I find it plausible that being a  
24 subscriber is an indicator, especially early  
25 subscribers of perhaps socioeconomic advantage.

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1 Savitz, Ph.D  
2 It may be associated with other favorable  
3 lifestyle habits in the same way, you know, that  
4 if you looked at doctors of iPads and we were  
5 following into the future, I bet you would see  
6 reduced mortality of iPad users if you looked into

7 Deposition of David Savitz  
the future because they're wealthier, more  
8 educated and more on top of things and so on.

9 So it doesn't mean that it's causing  
10 it, but it would not be a surprise to me if it was  
11 associated with reduced mortality.

12 Q Do you believe that being a Danish  
13 cell phone subscriber would impart protection from  
14 various cancers and neurological diseases?

15 MR. CAMPBELL: Objection.

16 Asked and answered.

17 A I don't think it would cause -- be  
18 causally related to improved health, no.

19 Q But --

20 A If I could just finish.

21 I think it is plausible that it  
22 would be a marker of better health.

23 Q So that's why it's relevant. Then  
24 why in your expert opinion did these studies find  
25 protection?

1 Savitz, Ph.D

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2 MR. CAMPBELL: Objection.

3 Asked and answered.

4 A Again when you say they found  
5 protection, what they found, again I'm accepting  
6 the premise that they found a reduced incidence of  
7 cancers in the aggregate among cell phone users.

8 And what I'm saying is that I don't  
9 believe that is at all, you know, plausibly likely  
10 to be a direct benefit of the cell phone use.

11 I believe that it may be

Deposition of David Savitz

12 statistically correct and the data may be exactly  
13 as they've described it.

14                   Again, for example, and this is  
15 speculative, if cell phone users smoke less and  
16 have favorable socioeconomic circumstances and  
17 other favorable lifestyle factors the numbers  
18 would show exactly that even if the cell phone use  
19 itself was not beneficial, it's certainly  
20 plausible to me that it could be predictor of  
21 better health.

22                   Q     So you're speculating on this  
23 conclusion?

24                   A     That's correct.

25                   Q     Do you agree that it was a lie of

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1   Savitz, Ph.D

2 omission when these studies concluded there was no  
3 risk. When they found -- when, in fact, they  
4 found being a cell phone subscriber provided  
5 protection, would you consider a lie of omission?

6                   A     No.

7   MR. CAMPBELL:   Objection.

8   Lack of foundation.

9                   Q     Were you aware that Anders Ahlbom  
10 published in 2005 that the Danish study's design  
11 was flawed, a man who you keep high regard, saying  
12 that not being able to include corporate users  
13 likely to be among the earliest and heavier users  
14 of mobile phones also weakens the statistical  
15 power of the study?



Deposition of David Savitz

16 MR. CAMPBELL: Objection.

17 Lack of foundation.

18 Q I can show you this. Do we have  
19 that study. Is this the Danish cohort?

20 MR. MORGAN: That's the first  
21 one.

22 MR. ABRELL: Where's that?

23 MR. MORGAN: That's in this  
24 document that's cited.

25 Q If I said the SSI report, are you

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1 Savitz, Ph.D

2 familiar with what that means?

3 A I know that it's part of the Swedish  
4 agencies, but I don't honestly know what the SSI  
5 stands for.

6 Q I can't say it either.

7 A Oh, the Statin Serum Institute.

8 Q Excellent.

9 A That's a Danish entity.

10 Q But were you aware that Anders  
11 Ahlbom criticized the Danish study in 2005?

12 MR. CAMPBELL: Objection.

13 Lack of foundation.

14 A I'm not aware of him making specific  
15 criticism of that study, but epidemiologists  
16 evaluating their own work and that of others, it's  
17 a routine matter to be critical in the sense of,  
18 again I draw a distinction between limitations in  
19 a study and those that are so severe as to negate  
20 its value.

Deposition of David Savitz

21 I think that if he said that, and I  
22 don't have the evidence that he did, but if he  
23 said it he was right and the author said the same  
24 thing in the discussion of their paper, but it's a  
25 limitation.

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1 Savitz, Ph.D

2 The question how severe the  
3 limitation it is, how damaging it is I suppose is  
4 something that can be debated. But saying it  
5 doesn't make the study go away. It's just another  
6 limitation like all individual studies have.

7 Q If we were to do a study that  
8 actually showed a reduced mortality would you  
9 think that's an indication of a flawed study?

10 MR. CAMPBELL: Objecti on.  
11 Incomplete hypotheti cal .

12 A It depends on who the population is.  
13 When, for example, we did our study of electric  
14 utility workers and like almost every other  
15 industrial population these workers had a lower  
16 rate of mortality for many causes as compared to  
17 the population at large, lower from cardiovascular  
18 disease, from lung cancer, from other diseases.

19 And it's pretty familiar to  
20 epidemiologists that that's a result of them being  
21 an employed physically able group. By definition  
22 they're working for the utility company.

23 I'm saying that the same thing for  
24 many exposures of interest. It's not just the

25 exposure. Deposition of David Savi tz  
They're a marker of a more general or

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1 Savi tz, Ph.D  
2 nonspeci fic nature that they use technology,  
3 they -- they have somebody to call. They can  
4 afford to pay the bills and you get these  
5 nonspeci fic markers of, you know, favorable health  
6 status and it's never a surprise when you find out  
7 that they are at lower risk of a variety of causes  
8 of death.

9 I bet they have a lower rate of  
10 cirrhosis. I bet they have lower rates of  
11 coronary disease. I think there's a certain  
12 predictable pattern. It turns out brain tumors is  
13 not so susceptible to that. Brain tumors in terms  
14 of soci oeconomic classes is as or more common in  
15 upper soci oeconomic classes. So it doesn't negate  
16 the brain tumor results to say that they have a  
17 lower overall mortality or a lower overall cancer.  
18 That simply doesn't negate the value of the study.  
19 It is part of the array of data that has to be  
20 interpreted and incorporated.

21 Q In fact, the Frei study found that  
22 all cancers with a one chance in 6.6 million that  
23 this protection was random result. Are you aware  
24 of that?

25 A I'm not saying that it's a random

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1 Savi tz, Ph.D  
2 result. I'm saying it's a real statistical  
Page 139

Deposition of David Savitz

3 association quite possibly, but that is not a  
4 damning regarding the information value of the  
5 study.

6 I'm saying that that is merely an  
7 indication most likely that those who adopt mobile  
8 phones have favorable lifestyles and socioeconomic  
9 circumstances.

10 Q Isn't the problem of protection  
11 known as the healthy worker effect and this is  
12 seen as a study flaw?

13 A In occupational cohorts like the  
14 utility workers that is the standard way that  
15 that -- that's the terminology that's used for it.  
16 It's a selective healthfulness based on basically  
17 being well enough and healthy enough to get a job,  
18 hold a job, et cetera.

19 It has to be incorporated into the  
20 interpretation of the results. It doesn't negate  
21 the value of the study. It's one of the reasons,  
22 for example, we often want to make what we call  
23 internal comparisons. Let's compare one set of  
24 utility workers to another set of utility workers  
25 is maybe a more useful approach than comparing

1 Savitz, Ph.D  
2 utility workers to the general population.

3 So once a bias became sort of  
4 recognized and familiar, there's a lot of work  
5 that's been done on strategies to circumvent the  
6 problem and still derive valid inferences and

7                   Deposition of David Savitz  
8   again this business of looking for the fatal flaw  
9   in studies is probably not the best way to  
10   evaluate them.

11                   The nature of the enterprise is that  
12   studies have strengths and they have limitations  
13   and evaluating an individual study you take that  
14   into account, in looking at the body of research  
15   you take account of the complementary strengths  
16   and limitations.

17                   In the area of cell phones certainly  
18   there has been enough different designs now and  
19   enough different approaches to have some  
20   convergent information to draw conclusions from.

21                   Q     Was this possible design flaw  
22   incorporated and dealt with in the Frei study and  
23   analysis to your knowledge?

24                   MR. CAMPBELL:   Objection.  
25                   Lack of foundation.

                  A     I'm not sure what you mean

1                   Savitz, Ph.D

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2   specifically in that.

3                   Q     It's a yes or no. Are you aware --  
4   are you aware whether or not Frei took into  
5   consideration the healthy worker effect or -- or  
6   not?

7                   A     As I indicated, there is -- from  
8   what we know of the healthy worker effect from  
9   occupational studies it varies for different  
10   causes of death.

11                   It's very strong for cardiovascular  
  Page 141

Deposition of David Savitz

12 disease. It's fairly strong for lung cancer. For  
13 some diseases like brain cancer, leukemia, certain  
14 others I'm not sure there is a healthy worker  
15 effect. In other words, that working population.  
16 It's mainly diseases that are predicted by tobacco  
17 use and poverty and other adverse circumstances.

18 I'm not sure for at least the brain  
19 cancer outcomes, it may not lend itself to valid  
20 inferences about cardiovascular disease or  
21 cirrhosis or lung cancer, but I don't think  
22 negates its value in making inferences about brain  
23 cancer.

24 Q Okay. It also found a one chance in  
25 2,306 that there was protection from Alzheimer's

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1 Savitz, Ph.D

2 disease. Does that change your opinion?

3 MR. CAMPBELL: Objection.

4 Lack of foundation.

5 Q Or vascular dementia with a one in  
6 66 chance that this protection was not due to  
7 chance or other dementia with a one chance in 1.44  
8 million that this protection was not due to  
9 chance. Male epilepsy, it's virtually certain  
10 that this protection was not due to chance. Now,  
11 those aren't cancers. Since we have that kind of  
12 protection with those types of end results, does  
13 that change your opinion?

14 MR. CAMPBELL: Same objection  
15 and compound.

16           A       I'm not sure. Maybe I've lost the  
17 thread of the argument here that I'm acknowledging  
18 that there's -- I'm not trying to argue that these  
19 differences, these sum causes of death, I'm not  
20 trying to argue that they are due to chance.

21                       What I'm saying is that they are  
22 statistically real and quite plausibly a result of  
23 the healthy worker effect and I think that for the  
24 inference of interest here is you have to zero in  
25 on what they found with respect to brain cancer.

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1                                       Savitz, Ph.D

2 And then you have to make a judgment and interpret  
3 the brain cancer results in light of what they saw  
4 for these other diseases.

5                       And so I haven't gone through the  
6 tables sort of one by one and I'm sure I couldn't  
7 explain, you know, I can't believe the pattern  
8 would be perfectly coherent, but overall the fact  
9 of reduced mortality from a number of causes does  
10 not negate its value.

11           Q       Are you aware that it found that --  
12 that use over ten years found brain cancer  
13 protection?

14                                       MR. CAMPBELL:   Obj ecti on.

15                                       Lack of foundati on.

16           A       Yeah. I would have to see -- I'd  
17 have to look at the individual tables for this  
18 level of detail.

19           Q       So you're not that familiar with the  
20 report?

Deposition of David Savitz

21           A     Again, I'm comfortable with the  
22 report. I haven't obviously memorized the content  
23 of the tables. And, you know, again I could  
24 comment on it number by number, but the -- I'm not  
25 sure it's going to necessarily help me make a

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1   Savitz, Ph.D

2 better overall inference about it.

3   I don't there's -- I think it's  
4 important to scrutinize it, but I'm not that  
5 optimistic that there's a lot further to be  
6 revealed from it other than its basic overall  
7 finding which is the suggestion of an absence of  
8 difference.

9           Q     Which has the greatest number of  
10 brain cancers, Interphone study, Hardell study, or  
11 the Danish cohort study?

12           A     You'd to show me the papers. I  
13 think probably the -- I'm guessing -- what were my  
14 choices again. Sorry.

15           Q     I bet you can guess the one. The  
16 Meant Interphone study, Danish cohort or Hardell.

17           A     I would imagine the -- it's an  
18 interesting question. The Danish cohort probably.

19           Q     I would have bet the Hardell.

20           A     I was just betting because it was a  
21 nationwide study.

22           Q     Isn't a larger number of cases a  
23 very important factor compared to a small number  
24 of cases?





Deposition of David Savitz

3 Q Do you think that a one to nine  
4 years is enough time for the latency of a cell  
5 phone brain tumor to develop given your medical  
6 background and your professional?

7 A Again, this is obviously it would  
8 presuppose that there is an effect and I'm not  
9 sure if you're asking if there is effect would it  
10 show up within ten years. Is that the question  
11 because it's going to be -- in other words, is it  
12 long enough. Maybe I'm not clear what long enough  
13 for what, long enough time to --

14 Q To develop.

15 A If, you know, again, first of all,  
16 again we don't know and I think in my case at  
17 least I think it's unlikely that there is any  
18 affect. So in my assessment of things it will  
19 never show up because it's not there.

20 But let's assume for the moment that  
21 you believe it's there. You are asking would it  
22 have shown up by now. I'm trying to rephrase it  
23 into something I can do better with.

24 You know, if you reason based on  
25 analogous environmental causes of cancer and

1 Savi tz, Ph.D  
2 that's a very broad generalization, but you can  
3 compare it to the literature on asbestos or  
4 ionizing radiation or arsenic or other things like  
5 that, to the best of my knowledge in every one of  
6 those cases if you waited ten years from the

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7                           Deposition of David Savitz  
8 exposure onset you would have seen the beginnings  
9 of a meaningful increase of risk. It may have not  
10 peaked out. Some things take quite a long time  
11 and the risk, the excess risk continues for  
12 decade. But what we're asking about now how long  
13 after exposure begins would we expect to see a  
14 problem if there is one and I think ten years  
15 getting into the range where if there is one we  
16 would be likely to see it.

17                           Maybe this is different than  
18 everything we've studied and maybe it will be 20  
19 years or 30 years or 50 years, but if you sort of  
20 use the information you have from analogous  
21 exposures it's one of the reasons as I watch the  
22 literature unfold and as the duration of  
23 experience accrues in my view the absence of  
24 demonstrable association became more compelling  
25 with time.

                          At the beginning you could honestly

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1                           Savitz, Ph.D  
2 say who know. Five years into it, who knows.  
3 Well, we're at least ten or maybe more like 15  
4 years into it now and I think we're starting to  
5 know and that's so it's long way of responding to  
6 your question that ten years isn't 30 years, but  
7 it's not nothing either.

8                           Q     So if latency time was longer than  
9 this ten-year period, nine-year period in question  
10 then how do we even know if the healthy worker  
11 effect is even valid?

Deposition of David Savitz

12           A     I don't understand, sorry, the  
13 question. I'm not sure of the connection between  
14 --

15           Q     Well, if they were going to take  
16 into consideration in the design flaws or take the  
17 design flaw out of this study and you have a  
18 latency time over ten years, how could it possibly  
19 compensate for that?

20                         MR. CAMPBELL:  Objection.  
21                         Vague.

22           A     I don't see the healthy worker  
23 effect in the latency issue as being related. I  
24 think that -- yeah, I don't see the connection  
25 there.

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1                                 Savitz, Ph.D

2                                 If the latency is longer than ten  
3 years let's say, hypothetically let's say there  
4 really is an adverse effect that doesn't show up  
5 for more than ten years, then we won't see any  
6 effect, period. And if we wait longer than ten  
7 years again hypothetically if there were an affect  
8 then we would see it materialize.

9                                 And so I think, if anything, it's  
10 just a question of how much comfort should we take  
11 in the absence of an adverse effect before ten  
12 years. Should the issue be put to rest, should we  
13 reserve our opinion. How confident should we be.

14                                 And I think with ten years I'm a  
15 little more confident than I was with five. As

Deposition of David Savi tz

16 it's moving towards 15 if it continues the way it  
17 is I would be more comfortable still. There's  
18 never a point though you can say we're done.  
19 Again I'm sure you are aware of this, but the  
20 technology keep changing, the patterns of use keep  
21 changing. It's a moving target.

22 And so the question is never going  
23 to be definitively answered, but at any given  
24 point in time, and I think we have more data now  
25 than we've ever had to answer this question which

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1 Savi tz, Ph.D

2 is good news and by and large, you know, it's --  
3 it's increasingly reassuring which I think is also  
4 may be good news.

5 Q We got a little bit of time here and  
6 to keep me from coming back to New York to finish  
7 this up I would ask you to try to be more  
8 responsive --

9 A Okay.

10 Q -- to the questions.

11 A Sure.

12 Q Are you aware that the Interphone  
13 and Hardell study found a double risk within ten  
14 years of -- within ten years of exposure?

15 MR. CAMPBELL: Objection.

16 Lack of foundation.

17 A I don't know that -- again, I don't  
18 know that they did. I need to look at the  
19 particular tables and look at the particular  
20 results.

Deposition of David Savitz

21 Q If that being the case would that  
22 change your opinion about this study?

23 A So what was the --

24 Q Strike that. Strike that.

25 Okay. Going to Page 11, 20m at the

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1 Savitz, Ph.D

2 top of the page you cite the -- I'm sorry, one  
3 more question.

4 Why did Hardell consistently find  
5 statistical association for long-term users?

6 MR. CAMPBELL: Objection.

7 Lack of foundation. Calls for  
8 speculation.

9 A In evaluating the body of research  
10 that's probably the most sort of compelling  
11 question are why are one investigator's results  
12 consistently deviate from the others.

13 If you want to think of it in very  
14 simple terms, it's either because he's right and  
15 everybody else is wrong or he's wrong and  
16 everybody else is right and I'm simplifying it a  
17 little bit and I can't give you a definitive  
18 answer to that.

19 I think that with the weight of new  
20 studies and the continuing evidence, the time  
21 trend monitoring, I think it's increasingly likely  
22 that his work is incorrect and the other work is  
23 valid.

24 But I can't again give a definitive

25 Deposition of David Savi tz  
assessment and I wish I could. If I could

1 Savi tz, Ph. D 176  
2 reconcile those in a defi ni ti ve way it would be  
3 very interesting to do so and I can' t and I  
4 haven' t seen anybody else reconcile it in a  
5 defi ni ti ve way ei ther.

6 Q So you haven' t analyzed the studies  
7 to that degree?

8 A I' ve looked at the published studies  
9 in great detail and understand how they might  
10 differ methodologi cally and it' s many, many subtle  
11 di fferences in his approach from some of the other  
12 people consi dering, you know, cordless phones in  
13 homes of how he' s handled deceased cases and  
14 non-deceased cases, but, no, the answer is, yes, I  
15 have reviewed them in detail. No, I have not  
16 arrived at an expl anati on that would account for  
17 them havi ng posi ti ve resul ts where the others,  
18 other studies do not.

19 Q You work -- you did some monographs  
20 for the IARC; is that right?

21 A I worked on one monograph for IARC.

22 Q Are you aware that they gave greater  
23 weight to the Hardell compared to the Interphone  
24 study?

25 MR. CAMPBELL: Objecti on.

1 Savi tz, Ph. D 177  
2 Lack of foundati on.  
Page 151

Deposition of David Savitz

3           A     Again, I don't know anything about  
4 the internal graduations?

5           Q     Would that surprise you?

6                     MR. CAMPBELL: Same objection.

7           A     Again, you know, a group of  
8 individuals will do as they wish with it and I'm  
9 aware that Hardell was one of the people doing the  
10 evaluation and so it's not, you know, that would  
11 not be implausible, but it's speculation. I  
12 wasn't there.

13          Q     Okay. I would like to move on to  
14 Paragraph 20m, the Ahlbom, Feychting, is that how  
15 you --

16          A     Feychting.

17          Q     Feychting.

18                     Mr. Ahlbom has been criticized for  
19 his conflicts of interest and so has Ms. Feychting  
20 as we pointed out earlier, but we turn to their  
21 study, Mobile Telephones and Brain Tumors and you  
22 reviewed that in preparing your expert report; is  
23 that correct?

24          A     That's correct.

25          Q     Were you aware that this was an

1                     Savitz, Ph.D

2 ICNIRP report?

3                     MR. CAMPBELL: Objection.

4                     Lack of foundation.

5           A     If I'm not mistaken it's just a  
6 commentary on the Frei, et al. paper.

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7                   Q           Deposition of David Savi tz  
8                   Are you aware that ICNIRP receives  
9                   industry funding?

10                               MR. CAMPBELL:  Obj ecti on.  
11                               Lack of foundati on.

12                   A           As I indicated I am really not aware  
13                   how they are structured, where the money comes  
14                   from.

15                   Q           Are you aware that Professor Ahlbom  
16                   has hidden his interests, conflicts of interest --  
17                   strike that.

18                               Are you aware that ICNIRP has no  
19                   medical expertise, is not accountable to any  
20                   governmental agency?

21                               MR. CAMPBELL:  Obj ecti on.  
22                               Lack of foundati on.  Compound.

23                   A           Again as I said, I don't know who  
24                   all is involved with advising them and about where  
25                   their funding comes from.

26                   Q           But you are a commi ttee member and

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1                               Savi tz, Ph. D  
2                   you don't -- you have no -- you have no knowl edge  
3                   of the organizati on that you are a member of?

4                   A           Again to clari fy, I'm not a member.  
5                   I serve on an advi sory panel eval uati ng  
6                   epi demi ol ogi c evi dence and the onl y ICNIRP  
7                   involvement wi th that, as I sai d, they pay the  
8                   travel expenses and they have to approve of the  
9                   goals of our revi ew.

10                               After that it's simply a group of  
11                   researchers eval uati ng li terature and publ i shi ng a  
12                   Page 153

Deposition of David Savitz

12 paper on it and that's really the level of  
13 involvement I have.

14 Q Were you aware that the ICNIRP  
15 selects its own commissioners and that Professor  
16 Feychting, currently ICNIRP commissioner, was  
17 selected to replace Professor Ahlbom when he left  
18 his ICNIRP commissioner position?

19 MR. CAMPBELL: Again lack of  
20 foundation. Compound.

21 A Again, I don't know anything about  
22 that.

23 Q It's like a self-perpetuating  
24 organization almost, my point.

25 At the bottom of Page 11 you state

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1 Savitz, Ph.D

2 that the declarants in favor of an injunction  
3 discuss alternative technologies.

4 So you would agree that a wire  
5 technology is an alternative to wireless WI-FI?

6 A Again, I am -- that's not as an  
7 expert. That's as a lay person who tries to get  
8 his computer to work.

9 What I'm saying specifically is  
10 these are part of the menu of issues that are  
11 outside of the realm of the scientific evidence,  
12 that they are certainly beyond my technical  
13 expertise and, you know, perhaps that beyond the  
14 expertise of some of the others who have  
15 commented.

16                                   Deposition of David Savi tz  
  (Val berg study was marked as  
17                                   Deposition Exhi bi t No. 33 for  
18                                   i denti fi ca ti on, as of thi s date.)  
19                    Q        I 'd l i ke to gi ve you what' s marked  
20   Exhi bi t A.   It' s the Val berg study, V-A-L-B-E-R-G.  
21                                   MR. CAMPBELL:   Exhi bi t 33.  
22                    Q        Exhi bi t 33.  
23                                   Are you fami li ar wi th thi s report  
24   that you ci ted i n your decl arati on?  
25                    A        Yes, I am.

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1                                   Savi tz, Ph. D  
2                    Q        Are you fami li ar that Mr. Repacholi  
3   was the design and team leader of thi s -- of thi s  
4   study?  
5                                   MR. CAMPBELL:   Obj ecti on.  
6                                   Lack of foundati on.  
7                    A        No. I only know he was one of the  
8   authors.  
9                    Q        And Mr. -- you' re aware that  
10   Mr. Repacholi has i ndustry backing?  
11                                   MR. CAMPBELL:   Obj ecti on.  
12                                   Lack of foundati on, vague.  
13                    A        No.  
14                    Q        You' re not aware of that?  
15                    A        No.  
16                                   MR. CAMPBELL:   Obj ecti on.  
17                    Q        Would i t change your opi ni on about  
18   the quali ty of thi s study i f you knew he di d have  
19   i ndustry background and fundi ng?  
20                    A        Again, thi s i s not a study, per se.

Deposition of David Savitz

21 This is a summary report.

22 Q A review?

23 A A review. No. Again, it wasn't the  
24 only one I looked at, but it was one that  
25 commented specifically on base stations.

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1 Savitz, Ph.D

2 There weren't a lot of other reports  
3 that had addressed those as well as other forms of  
4 cell phone use and one of the few that commented  
5 specifically on wireless networks.

6 Q Are you familiar with the  
7 international EMF project?

8 A No, I'm not.

9 Q No. So you're not aware -- are you  
10 aware that Motorola -- is the Institute of  
11 Electrical -- what is the IEE?

12 A It's the Society of Electrical  
13 Engineers.

14 Q Are you a part of that organization?

15 A No, I am not.

16 Q Are you aware that the Valberg  
17 report -- were you aware when you reviewed the  
18 Valberg report that the working group, that that  
19 working group was an international EMF project  
20 within the World Health Organization?

21 MR. CAMPBELL: Object on.

22 Lack of foundation.

23 A I was aware from reading the  
24 footnote that it was part of the headline, the

25 Deposition of David Savitz  
title of it is Workshop Report and I was aware

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1 Savitz, Ph.D

2 that it was a workshop conducted under the  
3 auspices of the World Health Organization.

4 Q And you are aware that Michael  
5 Repacholi is a listed author in the Valberg report  
6 funded by the International EMF project?

7 MR. CAMPBELL: Objecti on.  
8 Calls for speculation. Lack of  
9 foundation.

10 A I'm aware Repacholi is an author,  
11 but that's all I'm aware of.

12 Q Are you aware the International EMF  
13 project received industry funding of \$50,000 per  
14 year from Motorola, received \$150,000 per year  
15 from the mobile phone manufacturer Forum, EMF and  
16 received \$150,000 from the GSM Association?

17 MR. CAMPBELL: Objecti on.  
18 Lack of foundation.

19 A I wasn't even aware that there was  
20 an EMF project, so obviously I wasn't aware of the  
21 funding sources for it.

22 Q Would the receipt of such funds  
23 result in a conflict of interest?

24 A Again, it's so hypothetical it's --  
25 again, I've expressed my view on conflict of

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1 Savitz, Ph.D

2 interest and if the right precautions are taken to  
Page 157

Deposition of David Savitz

3 avoid influence I don't think there is an inherent  
4 inability to do meaningful and objective work.

5 I'd like to think the New York State  
6 Power Lines figured how to do that very well I  
7 might add. I think EPRI is very good at it. I  
8 don't know if they are good at it or not. That's  
9 a different question.

10 Q And you're aware that the Valberg  
11 report states that Repacholi has consulted for  
12 telecommunications and electric power companies?

13 MR. CAMPBELL: Objecti on.  
14 Lack of foundati on.

15 A I'm not -- again that's not  
16 something that I looked into or are aware of.

17 Q You're not aware of that?

18 A I'm not aware of that.

19 Q Going to Paragraph 23, you state  
20 that there's no scientifi c evidence whatsoever  
21 directly addressed the question of whether  
22 children exposed to WI -FI have any increase in  
23 health problems of any sort as compared to  
24 children not so exposed.

25 Never mind, scratch that.

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1 Savi tz, Ph.D  
2 Page 13 of your expert report,  
3 Paragraph 24 you state that the Pl ainti ffs'  
4 declarati ons, however, reported findi ngs from the  
5 laboratory are accepted as established facts even  
6 when the findi ngs from the studies have not been

7                         Deposition of David Savitz  
and cannot be replicated.

8                         Are you aware that in Mr. Morgan's  
9                         report, in light of that statement are you aware  
10                        that Mr. Morgan in his reply to your expert report  
11                        describes why replications cannot be achieved and  
12                        describes how they can be achieved.

13                        He shows that a study by Michael  
14                        Repacholi and others, founder of ICNIRP and the  
15                        International EMF project within WHO found a 2.4  
16                        fold increased risk of lymphoma in mice exposed to  
17                        microwave radiation was followed by a  
18                        non-replication-replication study which found no  
19                        such effect.

20                        Mr. Morgan quotes a current ICNIRP  
21                        Commissioner James Lin who analyzed why there had  
22                        not been a replication including that mice in the  
23                        non-replication-replication study were gaining  
24                        weight after they had died.

25                        I'm going to show you what's marked

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1   Savitz, Ph.D

2                        Exhibit 34. This is a study by James Lin, L-I-N.  
3   (Study by James Lin was marked  
4   as Deposition Exhibit No. 34 for  
5   identification, as of this date.)

6                        Q        So Mr. Morgan quotes a current  
7                        ICNIRP Commissioner James Lin who analyzed why  
8                        there had not been a replication including that  
9                        mice in the non-replication-replication study were  
10                        gaining weight after they had died.

11                        Do you feel that James Lin was

Deposition of David Savitz

12 correct in his analysis?

13 MR. CAMPBELL: Objection.

14 Lack of foundation.

15 A I have not -- again, I have not  
16 reviewed, I am not in a position to review the  
17 methods of the rodent experimental studies and so  
18 again that's an area where I have to rely more on  
19 the summaries of experts.

20 Q Well, being an ICNIRP commissioner  
21 you would put that in high regard; correct?

22 MR. CAMPBELL: Objection.

23 Misstates the testimony.

24 Q I'm sorry, strike that.

25 MR. CAMPBELL: When we get to

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1 Savitz, Ph.D

2 a good breaking point I'd like to take  
3 a quick break.

4 MR. ABRELL: Take a quick  
5 break.

6 THE VIDEOGRAPHER: The time  
7 now is 3:19 p.m. Off the record.

8 (Whereupon, at 3:19 o'clock  
9 p.m., a recess was taken to 3:31  
10 o'clock p.m.)

11 (The deposition resumed with  
12 all parties present.)

13 D A V I D S A V I T Z, Ph.D., resumed,  
14 and testified further as follows:

15 THE VIDEOGRAPHER: The time



Deposition of David Savitz  
now is 3:31 p.m. On the record.

16

17 BY MR. ABRELL:

18 Q Dr. Savitz, I apparently called you  
19 a ICNIRP commissioner here from time to time and I  
20 apologize for that. These acronyms and positions  
21 and whatnot, I apologize.

22 A I understand.

23 Q I don't mean to confuse things.

24 I'm going to turn a little bit now  
25 to a different direction. I have here some

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1 Savitz, Ph.D

2 studies. I'd like just to know what your opinion  
3 is on these.

4 This is a 2008 publication. I'm  
5 sorry, this study called Mobile Telephony  
6 Radiation Effects on Living Organisms. It's a  
7 2008 publication. It's by Dimitri Panagopoulos  
8 and I'm going to show you what's marked as Exhibit  
9 35.

10 (Mobile Telephony Radiation  
11 Effects on Living Organisms was marked  
12 as Deposition Exhibit No. 35 for  
13 identification, as of this date.)

14 Q Are you -- can you please read the  
15 name of the study?

16 A Mobile Telephony Radiation Effects  
17 on Living Organisms.

18 Q And what year was that published?

19 A 2008.

20 Q Are you familiar with the study?

Deposition of David Savitz

21           A     No, I'm not.  
22           Q     Can you please turn to Page 141 and  
23 begin reading from where it says thus -- it's  
24 highlighted. Can you read that into the  
25 transcript, please?

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1                                 Savitz, Ph.D  
2           A     Just that one paragraph?  
3           Q     Everything that's highlighted.  
4           A     Okay. Thus, digital mobile  
5 telephony radiation nowadays exert an intense  
6 biological action able to kill cells, damage DNA  
7 or decrease dramatically the reproductive capacity  
8 of living organisms. Diminishes of birth and  
9 insect populations can be explained according to  
10 reproduction decreases. Phenomena like headache,  
11 fatigue, sleep disturbances, memory loss, et  
12 cetera, reported as microwave syndrome can  
13 possibly be explained by cell death on a number of  
14 brain cells during daily exposures from mobile  
15 telephony antennas.  
16                                 New paragraph. Our experiments show  
17 that radiation intensities higher than one  
18 microwatt per square centimeter are able to  
19 decrease reproduction of living organisms by  
20 killing reproductive cells.  
21                                 Do you want me to skip to the next  
22 paragraph?  
23           Q     Please.  
24           A     Our experiments reveal that exposure

25 Deposition of David Savitz  
distance of 20 to 30 centimeters from a mobile

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1 Savitz, Ph.D

2 phone can be even more bioactive in exposure than  
3 contact with the antenna due to the distance of an  
4 intensity window around ten microwatts per square  
5 centimeter. This intensity in the case of the  
6 usual base station corresponds to a distance of  
7 about 20 to 30 meters from the antenna.

8 Q Are you familiar with this study?

9 A No, I am not.

10 Q Have you taken this study into  
11 consideration in forming your opinion?

12 A No, I have not.

13 Q Would it change your opinion based  
14 on the statement you just read?

15 A Well, in order to have it alter, you  
16 know, alter my opinion I would need to both read  
17 it, but I think I would also need to confer with  
18 others who may be more expert in the biology of  
19 these fields and their effects.

20 I would have a little -- again this  
21 is based on the first time to my knowledge that I  
22 have seen it. I would have a little bit of a  
23 suspicion of trying to judge things like where  
24 does it appear. It appears to be a book chapter  
25 which is maybe a little less certain than

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1 Savitz, Ph.D

2 something in a well respected scientific journal.

Deposition of David Savitz

3                   It doesn't mean it's wrong. It just  
4 means it's a little bit of a flag there and I  
5 have, you know, been faced with some updated  
6 information on the biological effects tend to look  
7 for expert groups or expert colleagues to help me  
8 judge the credibility of it.

9                   Q     So it's fair to say you didn't take  
10 that into consideration in forming your opinion?

11                  A     That's correct.

12                  Q     I am going to show you what's marked  
13 as Exhibit 36.

14                                 (Document entitled The Effects  
15 of Exposure to GSM Mobile Phone Base  
16 Station Signals on Salivary Cortisol,  
17 Alpha Amylase and Immunoglobulin A was  
18 marked as Deposition Exhibit No. 36  
19 for identification, as of this date.)

20                  Q     Can you read the title of this  
21 study, please?

22                  A     The Effects of Exposure to GSM  
23 Mobile Phone Base Station Signals on Salivary  
24 Cortisol, Alpha Amylase and Immunoglobulin A.

25                  Q     Well done.

192

1                                 Savitz, Ph.D

2                                 What year was that published?

3                  A     2010.

4                  Q     Can you read the highlighted portion  
5 and the conclusion there into the record, please?

6                  A     RF-EMF in considerably lower field



Deposition of David Savitz

12 Exhibit No. 37 for identification, as  
13 of this date.)

14 Q I would like to show you what's  
15 marked Exhibit 37.

16 Can you please read the name of the  
17 study, please?

18 A The Effect of Microwaves on the  
19 Central Nervous System.

20 Q And what year was that study?

21 A 1965.

22 Q Who performed that study?

23 A W. Bergman, B-E-R-G-M-A-N.

24 Q And that was on behalf of what  
25 company?

194

1 Savitz, Ph.D

2 A I don't know who the work was done  
3 for. The translation as I understand was for the  
4 Ford Motor Company research and scientific  
5 laboratory.

6 Q So are you familiar with this study?

7 A No, I'm not.

8 Q If you could please read to the --  
9 turn to the abstract -- if I can't find it, just  
10 please read in the highlights, please.

11 A This is from the abstract. The  
12 autonomic nervous system is affected by the  
13 microwaves of the centimeter wavelength band.

14 These waves affect circulation,  
15 respiration, temperature control, water balance,

16 Deposition of David Savi tz  
albumin, and sugar concentration in the  
17 cerebrospinal fluid, hydrogen ion concentration;  
18 EEG, GSL, sleep, conscious awareness, et cetera.

19 Q And were you aware that these  
20 effects -- these effects were known in 1965?

21 MR. CAMPBELL: Objection.

22 Lack of foundation.

23 A I really don't -- again, it's not  
24 something that I would know about. I can't really  
25 comment.

195

1 Savi tz, Ph. D

2 Q So you're not familiar with that  
3 study and didn't take that study into  
4 consideration when forming your opinion?

5 A That's correct.

6

7 (Study entitled Brain Proteome  
8 Response Following Whole Body Exposure  
9 of Mice to Mobile Phone or Wireless  
10 Dect Base Radiation was marked as  
11 Deposition Exhibit No. 38 for  
12 identification, as of this date.)

13 Q I'd like to show you what's marked  
14 as Exhibit 38.

15 Could you please read the name of  
16 study, please?

17 A Brain Proteome, P-R-O-T-E-O-M-E,  
18 Response Following Whole Body Exposure of Mice to  
19 Mobile Phone or Wireless Dect, D-E-C-T, Base  
20 Radiation.

Deposition of David Savitz

- 21 Q And what year was that study?  
22 A 2012.  
23 Q In epidemiology are newer studies  
24 given more weight than older studies?  
25 A Not for their newness, per se. Only

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1 Savitz, Ph.D

2 if they're better.

3 Q So -- okay. Good enough. And can  
4 you tell me who the principal author is of this  
5 study?

6 A I'll try. Adamantia,  
7 A-D-A-M-A-N-T-I-A, Fragopoulou,  
8 F-R-A-G-O-P-O-U-L-O-U.

9 Q I've seen a picture of her. She  
10 looks like a nice young lady.

11 And what year was that study?

12 A 2012.

13 Q Are you familiar with this study?

14 A No, I'm not.

15 Q No further questions on that  
16 exhibit.

17 (Changes of Clinically  
18 Important Neurotransmitters Under the  
19 Influence of Modulated RF Fields, a  
20 Long-Term Study under Real Life  
21 Conditions was marked as Deposition  
22 Exhibit No. 39 for identification, as  
23 of this date.)

24 Q I show you what's marked as Exhibit



25 39.

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1 Savitz, Ph.D

2 Can you please read the name of the  
3 study, please?

4 A Changes of Clinically Important  
5 Neurotransmitters Under the Influence of Modulated  
6 RF Fields, a Long-Term Study Under Real Life  
7 Conditions.

8 Q And what year was this study?

9 A 2011.

10 Q And who is the primary author on  
11 that -- well, who are the authors on that -- on  
12 this study?

13 A Klaus, K-L-A-U-S, Buchner,  
14 B-U-C-H-N-E-R and Horst, H-O-R-S-T, Eger, E-G-E-R.

15 Q Are you familiar with those  
16 scientists?

17 A No, I'm not.

18 Q Could you please read the abstract?

19 A This follow-up of 60 participants  
20 over one and a half years shows a significant  
21 effect on the adrenergic system after the  
22 installation of a new cell phone base station in  
23 the Village of Rimbach, Bavaria.

24 After the activation of the GSM base  
25 station the levels of the stress hormones,

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1 Savitz, Ph.D

2 adrenaline and noradrenaline increased  
Page 169

Deposition of David Savitz

3 significantly during the first six months.

4                   The levels of the precursor dopamine  
5 decreased substantially. The initial levels were  
6 not restored even after one and half years. As an  
7 indicator of the dysregulated chronic imbalance of  
8 the stress system the phenylethylamine (PEA)  
9 levels dropped significantly until the end of the  
10 study period.

11                   The effects showed a dose response  
12 relationship and occurred well below current  
13 limits for technical RF radiation exposures.  
14 Chronic dysregulation of the catecholamine system  
15 has great relevance for health and is well known  
16 to damage human health in the long run.

17                   Q     Are you familiar with those  
18 biological terms they stated in the abstract?

19                   A     I'm not sure specifically what terms  
20 you mean.

21                   Q     PEA and chronic dysregulation of the  
22 catecholamine system. Are you familiar with  
23 those?

24                   A     I'm familiar with catecholamines and  
25 the stress response.

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1   Savitz, Ph.D

2                   Q     What was the year of this study?

3                   A     2011.

4                   Q     And are you -- you are not familiar  
5 with the study?

6                   A     No, I'm not.

7                   Q       Deposition of David Savitz  
8                    You didn't -- then you didn't take  
9                    it into consideration when forming your opinion?

10                  A       That's correct.

11                               (Study entitled Sleep  
12                               Disturbances in the Vicinity of the  
13                               Short-Wave Broadcast Transmitter was  
14                               marked as Deposition Exhibit No. 40  
15                               for identification, as of this date.)

16                  Q       I'm going to show you what's marked  
17                    Exhibit 41.

18                               MR. CAMPBELL: Are we skipping  
19                               40?

20                               MR. ABRELL: 40, I'm sorry.

21                  Q       Can you please read the name of that  
22                    study. Off the record, please.

23                               THE VIDEOGRAPHER: The time  
24                               now is 3:47 p.m. This marks the  
25                               ending of Tape 4. Off the record.

                              (Whereupon, at 3:47 o'clock

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1                               Savitz, Ph.D  
2                               p.m., a recess was taken to 3:49  
3                               o'clock p.m.)

4                               (The deposition resumed with  
5                               all parties present.)

6                  D A V I D    S A V I T Z,    Ph.D.,       resumed,  
7                    and testified further as follows:

8                               THE VIDEOGRAPHER: The time  
9                               now is 3:49 p.m. This marks the  
10                               beginning of Tape 5. On the record.

11                  BY MR. ABRELL:

Deposition of David Savitz

12 Q Dr. Ahlbom, you have been given  
13 what's marked as Exhibit 40.  
14 Can you kindly read the study's  
15 title and principal author?  
16 A It is Dr. Savitz, but that's --  
17 Q I'm sorry, what did I say?  
18 A Ahlbom.  
19 Q Ahlbom. I'm sorry.  
20 A That's all right. I'm not offended.  
21 Q It was a bit of a mistake.  
22 A So you want me to read the title.  
23 Q The title and principal author.  
24 A Okay. Sleep Disturbances in the  
25 Vicinity of the Short-Wave Broadcast Transmitter,

201

1 Savitz, Ph.D  
2 Schwarzenburg, S-C-H-W-A-R-Z-E-N-B-U-R-G. The  
3 first author is Theodor, T-H-E-A-D-O-R, Abelin,  
4 A-B-E-L-I-N.  
5 Q What was the year of that study?  
6 A 2005.  
7 Q Can you turn to Page 208, please.  
8 Can you read the highlighted portion of that?  
9 A The series of studies successively  
10 revealed consistent evidence of a close  
11 association between operation of the Schwarzenburg  
12 transmitter and health relevant sleep  
13 disturbances.  
14 Q Are you familiar with this study?  
15 A No, I'm not.

16 Q Deposition of David Savitz  
17 So you didn't take it into  
18 consideration in forming your opinion?

19 A That's correct.

20 Radi ofrequency Electromagnetic  
21 Field, Male Infertility and Sex Ratio of  
22 Offspring.

23 (Radi ofrequency  
24 Electromagnetic Field, Male  
25 Infertility and Sex Ratio of Offspring  
was marked as Deposition Exhibit No.

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1 Savitz, Ph.D

2 41 for identification, as of this  
3 date.)

4 Q I show you what's marked as Exhibit  
5 40. If you could kindly read the study's title  
6 and principal author.

7 A Radi ofrequency Electromagnetic  
8 Fields, Male Infertility --

9 MR. ABRELL: Pardon me.  
10 Forty-one, isn't it?

11 MR. CAMPBELL: Can I get a  
12 copy, too.

13 MR. ABRELL: 40 or 41, it  
14 looks like 40 to me.

15 Q Can you kindly read the study's  
16 title and principal author?

17 A Radi ofrequency Electromagnetic  
18 Fields, Male Infertility and Sex Ratio of  
19 Offspring.

20 The first author is Valborg,  
Page 173

Deposition of David Savitz

21 V-A-L-B-O-R-G, Boste, B-O-S-T-E.

22 Q Can you read the conclusion  
23 paragraph at Page 376?

24 A In conclusion increasing  
25 self-reported work near equipment emitting

203

1 Savitz, Ph.D

2 electrofrequency electromagnetic fields among Navy  
3 personnel was significantly linearly associated  
4 with more reported infertility. Among those that  
5 have no children the association was even  
6 stronger.

7 The offspring sex ratio showed a  
8 significant linear trends with lower ratio boys to  
9 girls at birth when the father reported a higher  
10 degree of exposure to high frequency areas and  
11 communication equipment.

12 Q Are you familiar with this study?

13 A You know, I think I have seen it  
14 before, but it's been -- I'm not a hundred percent  
15 certain, but I believe I have read this.

16 Q And what year was that published?

17 A 2008.

18 Q And so did you take this study into  
19 consideration in forming your opinion?

20 A As I said, I am fairly sure it was  
21 part of the literature that I had considered. I'm  
22 just not sure quite of the timing of it. But when  
23 we had done our review this was -- there was a  
24 paper or something very similar to it that was

25                   Deposition of David Savitz  
part of the literature at that time.

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1                   Savitz, Ph.D

2                   So it's a long way of saying I'm not  
3 a hundred percent sure whether this was the one  
4 I'm thinking of that I had read or not.

5                   Q     So you're not sure if you took this  
6 into consideration?

7                   A     That's correct.

8                             (Study entitled Chronic  
9 Non-Thermal Exposure of Modulated 2450  
10 Megahertz Microwave Radiation Alters  
11 Thyroid Hormones and Behavior of Male  
12 Rats was marked as Deposition Exhibit  
13 No. 42 for identification, as of this  
14 date.)

15                  Q     Let me show you what's marked as  
16 Exhibit 42.

17                             Can you please read the name and  
18 primary author of this study?

19                  A     Chronic Non-thermal Exposure of  
20 Modulated 2450 Megahertz Microwave Radiation  
21 Alters Thyroid Hormones and Behavior of Male Rats.

22                  Q     What was the year of that study?

23                  A     2008.

24                  Q     Can you please read the highlighted  
25 portions of the abstract?

205

1                   Savitz, Ph.D

2                   A     Well, one thing that's highlighted  
Page 175

Deposition of David Savitz

3 is the frequency just by itself, 2,450 megahertz.  
4 Low energy microwave radiation may be harmful as  
5 it is sufficient to alter the levels of thyroid  
6 hormones as well as the emotional reactivity of  
7 the irradiated compared to control animals.

8 Q And 2450 megahertz, that would  
9 compare to 2.45 gigahertz; is that correct?

10 A I believe so, yes.

11 Q What is the -- what is the frequency  
12 in the study, 2.45 gigahertz?

13 A Well, again, you translate it, but  
14 it's listed as 2450 megahertz which I believe we  
15 agree it's 2.45 gigahertz.

16 Q And what is the frequency of a  
17 microwave oven?

18 A I think it's around that the level.  
19 I don't know if it's exactly that.

20 Q What is the primary frequency of  
21 WI-FI?

22 A I think it's around the same level.

23 Q And are you familiar with this  
24 study?

25 A No, I'm not.

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1 Savitz, Ph.D

2 Q Did you take it into consideration  
3 when forming your opinion?

4 A No, I did not.

5 (Study entitled RF Radiation  
6 Changes in the Prenatal Development of





Deposition of David Savitz

12 Q Regarding the FCC guidelines of 1000  
13 microwatts per centimeter squared how many orders  
14 of magnitude lower are the exposure levels  
15 measured in this study?

16 A I don't know.

17 Q Would it surprise you if it was two  
18 to three orders of magnitude lower?

19 MR. CAMPBELL: Objection.

20 Asked and answered.

21 A Again it's not something that I'm  
22 familiar with these sort of experimental  
23 paradigms.

24 Q So as an expert you are not able to  
25 form an opinion what magnitude difference there

208

1 Savitz, Ph.D

2 is?

3 A Not in these laboratory studies, no.

4

5

6

7

8

9

10

11

12

13

14

15

Q I'm going to show you what is marked  
Exhibit 44.

Can you please read the name of the

16 Deposition of David Savi tz  
study and the primary author?  
17 A A Possible Effect of Electromagnetic  
18 Radiation from Mobile Phone Base Stations on the  
19 Number of Breeding House sparrows, in parentheses  
20 Passer Domesticus, P-A-S-S-E-R,  
21 D-O-M-E-S-T-I-C-U-S.  
22 The first author is Joris, J -- I'm  
23 sorry, J-O-R-I-S, Everaert, E-V-E-R-A-E-R-T.  
24 Q What's the year of this study?  
25 A 2007.

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1 Savi tz, Ph. D  
2 Q Can you please read the highlighted  
3 portion of the abstract?  
4 A Our data showed that fewer house  
5 sparrow males were seen at locations with  
6 relatively high electric field strength values of  
7 GSM base stations and, therefore, support the  
8 notion that long-term exposure to higher levels of  
9 radiation negatively affects the abundance or  
10 behavior of house sparrows in the wild.  
11 Q Are you familiar with this study?  
12 A No, I'm not.  
13 Q Did you take into consideration when  
14 forming your opinion?  
15 A No, I did not.  
16 (Study entitled  
17 Electromagnetic Pollution from Phone  
18 Mass Effects on Wildlife was marked as  
19 Deposition Exhibit No. 45 for  
20 identification, as of this date.)  
Page 179

Deposition of David Savi tz

21 Q I'll show you what's marked as  
22 Exhibit 45.  
23 Can you please read the name of the  
24 title and the primary author?  
25 A Electromagnetic Pollution from Phone

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1 Savi tz, Ph. D  
2 Mass Effects on Wildlife.  
3 The author is Alfonso,  
4 A-L-F-O-N-S-O, Balmori, B-A-L-M-O-R-I.  
5 Q What is the year of that study?  
6 A 2009.  
7 Q Can you please turn to Page 196 and  
8 read the highlighted conclusion?  
9 A This literature review shows that  
10 pulse telephony microwave radiation can produce  
11 effects especially on nervous, cardiovascular,  
12 immune, and reproductive systems.  
13 Q You're not familiar with this study?  
14 A No, I'm not.  
15 Q And did not take it into  
16 consideration when forming your opinion?  
17 A That's correct.  
18 Q I'm done with all those studies now.  
19 Are you -- given that there is those  
20 kind of studies out there, are you inclined to  
21 change your opinion or possibly after review of  
22 these studies?  
23 A In order to incorporate and use the,  
24 well, the experimental literature and the

25                                   Deposition of David Savi tz  
Laboratory research on this, again I would not

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1                                   Savi tz, Ph. D  
2    have the expertise to do that on my own, but,  
3    first of all, you would have to do it  
4    comprehensively. Not just obviously illustrative  
5    studies, but all relevant studies.

6                                   And again I have no idea if these  
7    are ten of ten or ten of a thousand. Obviously  
8    that could make a difference. But also I think  
9    you need some people with the right expertise and  
10   so I feel I can judge the method of an  
11   epidemiologic study and recognize it doesn't  
12   always -- it doesn't always mean what it seems to  
13   mean to an outsider. I would have to ask the same  
14   question of this.

15                                  And so I think again to review it  
16   properly it would require really synthesizing the  
17   literature more comprehensively and filtering it  
18   through the judgment of those who can better  
19   interpret the adequacy of the methods and the  
20   credibility of the methods.

21                                  With that of course I would if -- I  
22   would, you know, welcome that -- you know, that  
23   insight and it could help put into context the  
24   epidemiologic studies certainly.

25                                  It's not -- again this can

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1                                   Savi tz, Ph. D  
2    established, would have bearing on the  
                                  Page 181

Deposition of David Savitz

3 plausibility of there being health effects from  
4 various sources of non-ionizing radiation  
5 exposure.

6 I've said that I thought based on my  
7 reading of the summaries of evidence and the  
8 reviews of various groups that the biologic  
9 evidence does not provide much support for there  
10 being adverse health effects.

11 If that were updated it would,  
12 obviously I would incorporate that into my  
13 thinking or my consideration.

14 Q In your view which studies are more  
15 relevant to WI-FI at 2.4 gigahertz, those of  
16 extreme low frequency or those of RF microwave  
17 radiation?

18 A Well, again, it's -- I'm not, you  
19 know, as I've said, I'm not expert in the  
20 biophysics, but it seems reasonable to assume that  
21 those of a similar frequency are more relevant  
22 than those of a very different frequency all other  
23 things equal.

24 Q Are you aware that IARC declared  
25 that ELF, EMF were a possible human carcinogen in

213

1 Savitz, Ph.D  
2 2001?

3 MR. CAMPBELL: Objection.  
4 Lack of foundation.

5 A I was aware that they had reviewed  
6 it. I think you had said earlier that that was

7 the case. Again, I'm generally familiar with them  
8 having made that decision.

9 Q And IARC's possible human carcinogen  
10 declaration on May 31, 2011, you're familiar with  
11 that?

12 A Yes, I am.

13 Q Turning to Paragraph 13 -- Page 13,  
14 Paragraph 25 of your declaration. It says the  
15 evidence -- hold on.

16 Once again you say that there's no  
17 support whatsoever found for an association  
18 between extremely low frequency magnetic fields to  
19 childhood brain cancer and that it has not been  
20 systematically or carefully integrated by an  
21 international team of experts.

22 Is that a correct statement of your  
23 understanding?

24 A I'm sorry, I think you said that it  
25 has not been.

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1 Savitz, Ph.D

2 I'm saying that is a group that I  
3 had the good fortune to be a part of that  
4 assembled the evidence from, if not all the major  
5 studies, most of the major studies and found that  
6 in the aggregate there was not support for an  
7 association between extremely low frequency  
8 electromagnetic fields and childhood brain cancer.

9 Q So you are aware that Kheifets, et  
10 al., 1995 meta study that concluded overall we  
11 found a small, but significant elevation in risk

Deposition of David Savitz

12 of brain cancer in relation to estimates of  
13 potential workplace magnetic field exposure. The  
14 risk was higher for some specific jobs and for  
15 glioma, a more specific cancer subtype.

16 In light of the Kheifetz's study --  
17 study's conclusion would you change your emphatic  
18 phrasing that there was no support whatsoever?

19 MR. CAMPBELL: Objectively.

20 Lack of foundation.

21 A Those are -- I mean those are two  
22 different bodies of research and two different  
23 questions and actually two different points in  
24 time.

25 One is a recent assessment of the

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1 Savitz, Ph.D

2 evidence on childhood cancer. The other one is a  
3 somewhat dated assessment of adult brain tumors in  
4 relation to occupation.

5 Again that predates most of the  
6 major studies, the more sophisticated studies of  
7 occupational exposure to electromagnetic fields in  
8 adult brain tumors.

9 Q And what studies are you referring  
10 to exactly?

11 A There's a study that I was involved  
12 with that we've talked about that looked at adult  
13 brain tumors in relation in U.S. electric utility  
14 workers.

15 There was a large study of electric



Deposition of David Savitz  
16 utility workers in Canada and France. A large  
17 study of electric utility workers in the United  
18 Kingdom.

19 Those are the ones that come to mind  
20 immediately.

21 Q Do you know the names of those  
22 studies off the top of your head?

23 A I don't -- again, I don't have the  
24 authors or the publications at my fingertips for  
25 those.

216

1 Savitz, Ph.D

2 Q So you believe those subsequent  
3 studies trump this 2000 -- 1995 Kheifets study?

4 A Again, what she did which was a  
5 reasonable thing to do at the time was assemble  
6 the bits of data that were available at that time  
7 and she and colleagues found it supportive of a  
8 possible association which was I think, I have no  
9 reason to doubt that was a valid inference at the  
10 time based on, you know, very limited quality  
11 literature.

12 In turn over the next, you know, 15  
13 years there were a number of high quality studies  
14 that did a much better job in assessing exposure  
15 that collectively have provided very little  
16 support for there being an association. It's just  
17 the literature moved forward between 1995 and the  
18 present.

19 Q But to say there's no evidence  
20 whatsoever is an incorrect statement; correct?

Deposition of David Savi tz

21           A     Well, you know, again I'm not sure  
22 if we're going to go back to childhood brain  
23 tumors or still on adult brain tumors because they  
24 are different literatures.

25                                 (Discussion off the record.)

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1                                 Savi tz, Ph.D

2           Q     I'll come back to that.

3           A     Okay.

4           Q     Turning to Page 14 of your expert  
5 report, Paragraph 27. You claim that the cell  
6 phone causes -- you state the claim that cell  
7 phone causes -- cause brain cancer on the side of  
8 the head where the phone is regularly used is not  
9 true and that the detailed study showed no  
10 correlation whatsoever between a cell phone  
11 exposure and a location of brain tumors.

12                                 Is that still your opinion?

13           A     Yes, it is.

14           Q     Mr. Morgan in his reply to your  
15 expert report has provided copious evidence that  
16 cell phones cause brain cancer on the side of the  
17 head where the cell phone is regularly used. Have  
18 you changed your mind?

19                                 MR. CAMPBELL:  Objection.

20                                 Lack of foundation.

21           A     No, I am -- again, I am considering  
22 the array of evidence.  It's a reasonable question  
23 to ask whether there is a higher risk in the sites  
24 with higher exposure and while there are some

25 Deposition of David Savitz  
studies that do suggest that, in my view in the

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1 Savitz, Ph.D  
2 aggregate the literature as a whole does not  
3 support that contention.

4 Q Other than -- are you familiar with  
5 the Larjagaara, L-A-R-J-A-G-A-A-R-A, study?

6 A Yes.

7 Q Other than that study have you --  
8 have you reviewed every case controlled study that  
9 reported risk of brain cancer, bilaterally risk --  
10 bilaterality risk of brain cancer from ipsilateral  
11 and contralateral use by years of use?

12 A We have looked at that as part of  
13 the review that was done by the ICNIRP  
14 Epidemiology Committee at that time and that's  
15 again prior to the Interphone study.

16 So I'm familiar with the studies  
17 prior to the Interphone, Interphone and then this  
18 is actually a follow-up from the various parts of  
19 Interphone that have been followed up.

20 So I'm not saying, it's possible  
21 there are some individual papers in that set that  
22 I have missed, but I think in general I'm -- I'm  
23 rather familiar with the studies that have  
24 provided evidence on laterality.

25 Q Going -- jumping around here off the

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1 Savitz, Ph.D  
2 subject of laterality.

Deposition of David Savitz

3                   Regarding the studies that I  
4 presented here as Exhibits 35 through 42, to which  
5 review of your own were you referencing when you  
6 said you had not taken the aforementioned of RF  
7 microwave radiation exhibits into consideration.  
8 You spoke of a review?

9                   MR. CAMPBELL:   Objection.

10                   Vague.

11                   A       I am -- I don't honestly recall  
12 saying it in those terms. I think you had asked  
13 me if I had taken that into account in forming my  
14 opinion which I -- I think I answered.

15                   Q       Thank you. Going back to the  
16 laterality issue, when you wrote your expert  
17 report were you aware of the two warring groups of  
18 investigators within the Interphone study?

19                   MR. CAMPBELL:   Objection.

20                   Lack of foundation.

21                   A       I had heard informally about  
22 disagreements and interpretation of the Interphone  
23 study.

24                   Q       Have you reviewed the Cardis, et al.  
25 study that Mr. Morgan cited in his commentary when

220

1                   Savitz, Ph.D

2 he included analyzing these two studies?

3                   A       Which one are you referring to?

4                   Q       I'll show you, I hope.

5                               (Study entitled Risk of Brain  
6 Tumors in Relation to Estimated RF

7                   Deposition of David Savi tz  
8                   Dose from Mobile Phones. Results from  
9                   five Interphone Countries was marked  
10                  as Deposition Exhibit No. 46 for  
11                  identification, as of this date.)

12                 Q     I'd like to show you what's marked  
13                  Exhibit 46.

14                         Are you familiar with -- can you  
15                  read the name of this study and the primary author  
16                  into the record, please?

17                 A     Risk of Brain Tumors in Relation to  
18                  Estimated RF Dose for Mobile Phones, Results from  
19                  Five Interphone Countries.

20                         The first author is E., initial E.,  
21                  Cardis, C-A-R-D-I-S. I have read this paper.

22                 Q     Do you realize that this -- this  
23                  study shows a laterality?

24                                 MR. CAMPBELL:   Objecti on.  
25                                 Lack of foundati on.

                  A     I -- again I read this when it first

1   Savi tz, Ph.D  
2                  came out. I don't -- I honestly don't recall the  
3                  detail at that level.

4                 Q     Turning to Table 3. Can you read  
5                  at the -- I'll highlight this section for you.  
6                  Can you tell me what the statistical significance  
7                  of that is?

8                                 MR. CAMPBELL:   Which one are  
9                  you referring to?

10                 A     Table 3. I mean it's hard to do  
11                  this in isolation without explaining what the

Deposition of David Savitz

12 table is about and so on, but it provides odds  
13 ratios, in this case we're interested in gliomas  
14 rather than meningiomas, for an estimate of the  
15 total cumulative specific energy exposure for  
16 those who I guess were exposed seven or more years  
17 in the past, and the highest category is 3123.9 or  
18 higher estimated, I guess that's joules per  
19 kilogram and the odds ratio estimate is 1.91 with  
20 a 95 percent confidence interval of 1.05 to 3.47.

21 Q Are you aware that this study was a  
22 laterality study?

23 A I thought that it addressed a number  
24 of aspects of dose or exposure. It included  
25 laterality. In other words, yes.

222

1 Savitz, Ph.D

2 Q Similar to the Larjagaara study?

3 A Again, I'd have to compare them. I  
4 am not conversant immediately with the exact  
5 details of them.

6 Q So did you review this study in  
7 forming your opinion that there is no  
8 association -- that there's no -- that the claim  
9 that cell phone causes brain cancer on the side of  
10 the head where the phone is regularly used is not  
11 true. Did you take this study into consideration?

12 A Again, I was aware of it and I tried  
13 to indicate in the aggregate there's not  
14 consistent support for that.

15 I didn't say there's no studies that

Deposition of David Savitz

16 find -- there are indeed studies that have that  
17 suggestion, but there's -- the literature remains  
18 very inconsistent and I think at least not very  
19 convincing and I -- again I'm not, I don't want to  
20 be in a position trying to argue that there's no  
21 support. That's simply not the case.

22 But I am also trying to make the  
23 argument it's not universally accepted,  
24 universally found. It's something that again was  
25 presented as sort of a statement of fact that this

223

1 Savitz, Ph.D  
2 is well known and accepted as true and I don't  
3 think that that's -- it's anywhere near that level  
4 of evidence.

5 Q If you turn to -- turn to Page 25 of  
6 the Morgan reply.

7 MR. CAMPBELL: It's 17.

8 A I'm sorry, I have lost control of  
9 the stack of materials. I've got it.

10 Q Are you familiar -- did you review  
11 this addendum?

12 A I looked at it, yes.

13 Q And are you in disagreement with  
14 this -- these conclusions?

15 A You have to be more specific about  
16 what you're referring to here.

17 Q Can you read the -- after Figure 1.  
18 This is data from the Cardis study.

19 A Let me just make sure I'm at the  
20 right place here. Page 25?

Deposition of David Savitz

21 Q Page 25.  
22 A The paragraph starts results shown.  
23 Q No, risk of brain tumor.  
24 A Figure 1, risk of brain tumor by  
25 increase of absorption of mobile phone radiation.

224

1 Savitz, Ph.D

2 Q Then read the next paragraph,  
3 please.  
4 A All right. Results shown in Table 3  
5 of the study are of particular interest in that it  
6 reports risk in years since mobile phone use first  
7 began. With seven plus years since mobile phone  
8 use began at the highest level of cumulative  
9 observed radiation at the tumor's location there  
10 is a significant increased risk of brain cancer  
11 and meningioma. This is shown graphically in  
12 Figures 2 and 3.  
13 Q And can you continue reading?  
14 A Figure 2 not only shows a  
15 significant 91 percent increased risk of brain  
16 cancer at the highest level absorbed mobile phone  
17 radiation and also shows a significant trend, less  
18 than .01 with increasing absorbed radiation for  
19 people who have used a mobile phone for seven or  
20 more years.  
21 Q And the next paragraph, please.  
22 A Figure 3 shows a significant 101  
23 percent increased risk of a meningioma at the  
24 highest absorbed radiation level when a mobile



25 Deposition of David Savi tz  
phone has been used for seven or more years.

225

1 Savi tz, Ph. D

2 Q Do you have any reason to dispute  
3 this -- this summary of Table 3 that is found in  
4 the Cardis -- Cardis study?

5 MR. CAMPBELL: Well, to be  
6 fair you should give him the chance to  
7 look at the two side by side because  
8 there is a lot of data contained in  
9 both, so.

10 A Again to methodically, you know, I  
11 don't know how much time you want to take to  
12 methodically go through element by element in the  
13 table and transcribe it and so on, to make sure  
14 that I, you know, that it was done as stated or as  
15 intended I would have to, you know, I can't just  
16 eyeball that. It's a little bit more of a project  
17 to do that properly.

18 (Study entitled Mixed Signals  
19 on Cell Phones and Cancer was marked  
20 as Deposition Exhibit No. 47 for  
21 identification, as of this date.)

22 Q I'm going to show you what's next  
23 marked Exhibit 47.

24 Can you please read me the name of  
25 this, the title of this letter, paper?

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1 Savi tz, Ph. D

2 A Mixed Signals on Cell Phones and  
Page 193

Deposition of David Savitz

3 Cancer.

4 Q And who is the author of this paper?

5 A Me.

6 Q Are you familiar with this paper?

7 A Yes, I am.

8 Q And can you read the fourth

9 paragraph for me in its entirety?

10 A One striking aspect of their  
11 findings is that risk for long-term users was  
12 confined entirely to the side of the head on which  
13 the phone was most often used. This finding  
14 merits special attention. What distinguishes the  
15 side of the head used for listening to the  
16 telephone at least three candidate explanations  
17 come to mind.

18 One it is the side of the head that  
19 receives by a large margin more radiofrequency  
20 radiation from the antenna consistent with the  
21 causal hypothesis.

22 Two, it is the side -- side that has  
23 been chosen for listening perhaps hearing is best  
24 on that side.

25 Three, because it is the side that

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1 Savitz, Ph.D

2 is relied upon for hearing subtle losses would  
3 more likely lead to medical attention.

4 Q So is it still your opinion that  
5 there is no evidence that there is -- is it still  
6 your opinion that there's no correlation

7 Deposition of David Savitz  
8 whatsoever between which side of the head the cell  
9 phone is used regularly, that that -- that that  
10 statement is not true?

11 A Again, I have not said there is no  
12 evidence. I've said there is not a consistent or  
13 cohort body of evidence that points in that  
14 direction. It's mixed. There are individual  
15 studies that do and there are other studies of  
16 seemingly similar quality that do not.

17 So it doesn't -- in this case I was  
18 commenting on a study that did have that finding.  
19 I cited another study recently that's of very high  
20 quality that did not.

21 Q But to say that there's no  
22 correlation whatsoever, that's not -- that's not  
23 accurate; is it?

24 MR. CAMPBELL: Objecti on.

25 Misstates the exhibi t.

Q Turning to Paragraph -- Page 14 of

1 Savitz, Ph.D  
2 your expert report, Paragraph 27, the American  
3 Journal of Epidemiology recently published a  
4 detailed study that showed.

5 Is that the study you were just  
6 referring to?

7 A That's correct.

8 Q It showed no correlation whatsoever  
9 between cell phone exposure and the location of  
10 brain tumor?

11 A That study did not.

Deposition of David Savitz

12 Q That study did not?  
13 A I am again reacting to a series of  
14 claims made in Dr. Carpenter's declaration and  
15 what I'm pointing out is the claim that there is  
16 consistent well-accepted, well-established  
17 evidence of this nature is not supported in the  
18 literature, that there is inconsistent evidence.  
19 Some support, some lack of support. I'm not  
20 saying there's no evidence.  
21 Q Larjagaara, you know him?  
22 A I do not.  
23 Q Or her?  
24 A I do not.  
25 Q But you're aware of the two

229

1 Savi tz, Ph.D  
2 different groups within the Interphone study you  
3 said earlier; is that correct?  
4 A I don't know who's in which of the  
5 groups exactly, but I'm aware of the strong  
6 disagreement about the meaning of the findings.  
7 Q And he's probably in one -- he's in  
8 one of the groups that -- strike that.  
9 And up into Paragraph 2, can you  
10 please read the first sentence, please?  
11 A We're back --  
12 Q Of 47.  
13 A When epidemiologists contend with a  
14 question driven by public health concerns the  
15 foundation for a causal association is often

Deposition of David Savi tz  
16 fragmentary and the likelihood of an effect is  
17 typically very small.

18 Q When you speak of public health  
19 concerns are you talking in your professional  
20 opinion or your personal opinion?

21 A I don't think there's a difference  
22 in them. Let me say in this case it's  
23 professional opinion. I would like to think there  
24 is some concordance what I think as an  
25 epidemiologist and what I think just as a

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1 Savi tz, Ph.D  
2 civilian. But in this case I was speaking about  
3 it as an epidemiologist interpreting data.

4 Q So from time to time as  
5 epidemiologist you use words such as concern?

6 A Of course.

7 Q Okay. Turning to paragraph -- going  
8 to Paragraph -- Page 14 of your expert report,  
9 Paragraph 28. You state that the only large,  
10 rigorously conducted study of cell phone use and  
11 childhood brain tumors shows no association  
12 whatsoever. Is this correct?

13 A That's correct.

14 Q I'm going to show you what's marked  
15 as Exhibit F. What are we up to, 40?

16 MR. CAMPBELL: Forty-eight.

17 Q Okay. Let me show you what's marked  
18 as Exhibit 48.

19 (Study entitled Mobile Phone  
20 Use and Brain Tumors in Children and  
Page 197



25 Deposition of David Savitz  
there was an inverse association with an unknown

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1 Savitz, Ph.D  
2 or central location I guess of the tumor so that  
3 it produced positive associations for both the use  
4 on the same side and use on opposite side.

5 Q Can you give me the exhibit, please.  
6 Can you read what's highlighted  
7 there?

8 A You highlighted the highest dose  
9 groups for cumulative duration of subscriptions in  
10 years of over four years for ipsilateral use  
11 produced an odds ratio of 3.74 with a confidence  
12 interval of 1.19 to 11.77. Cumulative duration of  
13 calls of over 144 hours yielded an odds ratio of  
14 2.64 with a confidence interval of 95 percent,  
15 confidence interval .92 to 7.59 and cumulative  
16 number of calls greater than 2638 yielded an odds  
17 ratio of 2.91 with a confidence interval of 1.09  
18 to 7.76.

19 Q How confident are those confidence  
20 levels?

21 A I'm not sure what you mean.

22 Q Are they significant?

23 MR. CAMPBELL: Objectively,  
24 vague.

25 A Do you mean --

233

1 Savitz, Ph.D

2 Q Are those odds ratios considered  
Page 199

Deposition of David Savitz

3 significant in terms of epidemiology?

4 A Well, they are statistically  
5 significantly different from one, if that's what  
6 you mean. At .05 value that's what the 95 percent  
7 confidence interval tells you.

8 I don't know if you mean it in a  
9 broader sense are they significant in the sense of  
10 meaningful. They are statistically, two of them  
11 are the P value would be less than .05. One of  
12 them it would be something a little more than .05.

13 Q Pardon me. I highlighted one more  
14 there. Can you read that 2.66 there into the  
15 record?

16 A Yes. Cumulative duration of calls  
17 between 36 and 144 hours yields an odds ratio of  
18 2.66 with a 95 percent confidence interval of 1.05  
19 to 6.71.

20 Q And do you find that statistically  
21 significant?

22 A It is by definition. Yes, it is  
23 statistically significant at the .05 level.

24 Q Turning to Table 4, please. Let  
25 me -- can you read into the record the highlighted

234

1 Savitz, Ph.D

2 portions of that table?

3 A For operator recorded use looking at  
4 time since first subscription of greater than 2.8  
5 years there is an odds ratio of 2.15 with a  
6 confidence interval of 1.07 to 4.29 and the trend



7 Deposition of David Savitz  
to test for linear trend is .001 P value.

8 Q What does a linear trend mean?

9 A That's a way of asking whether there  
10 is statistical support for there being an  
11 increased risk across the categories of exposure  
12 that have been defined.

13 Q Is .001 statistically significant?

14 A Yes, it is.

15 Q And the 2.15 to 1.07 to 4.29, is  
16 that statistically significant?

17 A Yes, it is.

18 Q So is it still your opinion that the  
19 Aydin study shows no association whatsoever  
20 between cell phone use and brain -- childhood  
21 brain tumors?

22 A It certainly doesn't show a  
23 consistent evidence of an association. It has,  
24 you know, some as I said both inconsistent and  
25 even some contradictory sorts of findings imbedded

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1 Savitz, Ph.D

2 within it. Scattered through it are the findings  
3 you have highlighted as the evidence that would be  
4 considered supportive of an association, but again  
5 we could go through probably a much greater volume  
6 of evidence that would argue against it.

7 And so again in isolation they are  
8 individual findings that taken in isolation are  
9 supportive of an association. In my view the  
10 study in the aggregate as a body of evidence is  
11 not supportive of an association.

Deposition of David Savitz

12 Q So you would essentially discount  
13 these findings within the study?

14 A I would integrate them in with the  
15 rest of the body of findings to make an overall  
16 judgment.

17 Q It's such a high statistical  
18 significance. How can you discard them?

19 A Well, again, I'm not discarding it.  
20 I'm integrating it in with the other  
21 considerations, but I don't see any reason why one  
22 would have expected to see that particular index  
23 of exposure associated, but not the one below it  
24 or the one to the right of it.

25 And so you sort of, again it's

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1 Savitz, Ph.D

2 possible that that one is revealing the truth, but  
3 there's no logical reason to think that that  
4 result is in any way more credible, more  
5 informative than the other results.

6 And the best judgment comes from  
7 looking at the totality of those results, not just  
8 isolating the one that is supportive of a positive  
9 association.

10 I mean it would just be as arbitrary  
11 to pick some block which shows an inverse  
12 association to say that's revealing the truth when  
13 you have to look at the totality of the evidence  
14 to come to an informed judgement.

15 Q But to say there's no correlation,

Deposition of David Savitz

16 I'm sorry, no association whatsoever, is that --

17 A Probably no consistent association.

18 No, you know, no consistent support from

19 association. We could talk about the exact

20 wording of that, but that the study is not the

21 study as a -- the body of results from the study

22 are not supportive of an association.

23 Q Okay. You made reference to data on

24 one side of the chart and one on the other. The

25 side of the chart we were talking about was

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1 Savitz, Ph.D

2 operator recorded use, meaning the actual amount

3 of time that the telecommunications company or has

4 records of phone use versus the study in the

5 middle which was recall, which was based on user

6 recall.

7 Which one do you think is more

8 accurate, the operator recorded use or the

9 self-reported use?

10 A I really -- again the self-reported

11 use with available operator data and then again

12 without operator data and certainly if there's

13 documented use by this individual that would

14 probably be more accurate than recall alone.

15 I don't know exactly. I'd have to

16 look in more detail as to how they constructed the

17 middle column. It's a little unclear to me what

18 that means, the self-reported use with available

19 operator data.

20 But again, as I said, you could ask

Deposition of David Savitz

21 across those different columns, but then you could  
22 look down the table and say, yes, time since first  
23 subscription. I don't know that that's the dose  
24 measure that I would find most persuasive.

25 I think duration index of calls.

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1 Savitz, Ph.D

2 Some use that index as an informative one. I'm  
3 not saying I know what's the most informative one,  
4 but I certainly wouldn't make the claim with the  
5 one that produces the significantly significant  
6 result is inherently the best. That's -- again  
7 that's backwards reasoning. The results say  
8 something, therefore the methods must be correct.

9 I would have to judge the methods  
10 independent of the results and I would say it's a  
11 reasonable index. When you don't know what the  
12 right one is you look at multiple indices and  
13 they've done that to their credit, but then in  
14 interpretation you have to use all the evidence  
15 you have generated to come to a judgment.

16 Q So when you made your emphatically  
17 certain statement of no association whatsoever,  
18 you were aware that this study found more than a  
19 double risk for childhood brain cancer where cell  
20 phone billing records were available?

21 MR. CAMPBELL: Objecton.

22 Misstate testimony.

23 A I was aware of the results of the  
24 study as published and that's obviously a part of

25 Deposition of David Savitz  
the results that were published.

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1 Savitz, Ph.D

2 THE REPORTER: I'm going to  
3 need a break soon.

4 MR. ABRELL: Let's take a  
5 break.

6 THE VIDEOGRAPHER: The time  
7 now is 4:42 p.m. Off the record.

8 (Whereupon, at 4:42 o'clock  
9 p.m., a recess was taken to 4:56  
10 o'clock p.m.)

11 (The deposition resumed with  
12 all parties present.)

13 D A V I D S A V I T Z, Ph.D., resumed,  
14 and testified further as follows:

15 THE VIDEOGRAPHER: The time  
16 now is 4:56 p.m. On the record.

17 BY MR. ABRELL:

18 Q Thank you, Dr. Savitz. Hopefully we  
19 can finish up here quick.

20 Talking about the Aydin study were  
21 you aware that this study did not include the most  
22 common childhood brain cancer, PILOCYTIC,  
23 A-S-T-R-O-C-Y-T-O-M-A, pilocytic astrocytoma?

24 MR. CAMPBELL: Object ion.  
25 Lack of foundation.

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1 Savitz, Ph.D

2 Go ahead.  
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Deposition of David Savitz

3           A     I -- again I was not focused on the  
4     specific forms of childhood brain tumors that were  
5     and weren't included. Looking at the list it  
6     seemed to be the most the ones I was most familiar  
7     with.

8           Q     Mr. Morgan described this -- the  
9     fact that they left out such a common cancer as  
10    sloppy.

11                   How would you characterize that  
12    childhood brain cancer study did not include the  
13    most common childhood brain cancer?

14                   MR. CAMPBELL:  Objection.

15                   Lack of foundation.

16           A     Again, I don't know -- I don't have  
17    the relative frequency on child tumors and to be  
18    honest I would be quite surprised that they  
19    wouldn't have aggregated childhood brain tumors in  
20    the conventional way.

21                   In other words, I don't know why  
22    given they have the registry data and  
23    comprehensive diagnosis there's no reason that  
24    they would have not done it in a conventional way.

25           Q     Going to Paragraph 29.  You state in

1                   Savitz, Ph.D  
2    the first paragraph, the prediction of an  
3    epidemia -- epidemic of cancer resulting from  
4    exposure to non-ionizing radiation, specifically  
5    from cell phones, is simply not occurring, despite  
6    widespread use for over a decade.

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Deposition of David Savitz  
Dr. Savitz, Do you agree that

7  
8 smoking tobacco causes lung cancer?

9 A Yes, I do.

10 Q What do you estimate would be the  
11 average time where a person first started smoking  
12 and a diagnosis of a lung cancer?

13 MR. CAMPBELL: Objection.

14 Calls for speculation.

15 A The average time -- I'm just trying  
16 to sort of understand that. Typically if people  
17 start smoking in their teens and they typically  
18 develop cancer, if at all, in their 60's maybe.

19 So it's a very long interval, but  
20 that's not the same as asking whether, let's say,  
21 you had a bunch of people and they were, you know,  
22 they started smoking at different ages.

23 You would see it within about  
24 typically ten years from the onset of smoking if  
25 they were at the right age where cancers are

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1 Savi tz, Ph. D  
2 occurring, you would see an increased incidence of  
3 lung cancer starting fairly early. It would  
4 continue for quite a long period, but it's not  
5 that it would be, you know, again -- sorry, I'm  
6 not saying it clearly.

7 The problem is that if you start a  
8 young age nobody is getting cancer in their 20's  
9 and 40's. If you started smoking at age 40 you  
10 would start to see risk at age 50. If you started  
11 smoking at age 50 you would see increased risk by

Deposition of David Savitz

12 age 60.

13 So I don't think it, it's not that  
14 it's silent until 50 years have gone by. It  
15 depends on when the cancers would typically occur  
16 under normal circumstances.

17 Q So is it your opinion that there is  
18 a latency period of about 30 years?

19 A Again, it's distributed. There may  
20 be an average that is, I don't know exactly what  
21 it is, but let's say 20, 30 years on average.

22 But what we're talking about now in  
23 the case of an introduction of a new exposure like  
24 cell phones is whether we see any glimmer of it.  
25 We're not asking if it's hit its peak or if it's

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1 Savitz, Ph.D

2 at its most dramatic manifestation. We're asking  
3 is there a hint.

4 And if you -- the same thing is  
5 true, when smoking declined you saw hints of  
6 benefit in ten years and when smoking was  
7 initiated my sense is you see the, again I would  
8 have to do the historical study, but you would see  
9 the beginnings of an increase within ten years.  
10 It wouldn't be at its peak, but it would be  
11 identifiable.

12 Q So incidence is a whole population  
13 risk is percentage population per exposed?

14 A So I don't understand the phrasing  
15 of that.



Deposition of David Savi tz

16 Q You would say incidence is whole  
17 populati on?

18 A Well, when we're talking about these  
19 monitoring what we are talking about is the fact  
20 that the prevalence of mobile phone use was going  
21 up very dramatically and over that period, of  
22 course then the question is whether cancer rates  
23 were changing in the whole populati on.

24 And so as it went from literally no  
25 one to virtually everyone, if there was an adverse

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1 Savi tz, Ph. D

2 effect it should become apparent as exposure  
3 increased so dramatically over such a short period  
4 and that's not been the case.

5 Q Turning off the subject a bit, you  
6 said something to the effect that you rely on  
7 other people to assess methodologies on bodies of  
8 literature you're not familiar with; is that  
9 correct?

10 A That's right, yes.

11 Q In subject matters?

12 A That's right.

13 Q Whom did you rely on in making your  
14 opinions on RF in this case?

15 A Well, to be clear the epidemiology  
16 of RF I feel comfortable that I'm quite conversant  
17 in. The potential for biologic effects of RF was  
18 based on a variety of the federal agencies, the  
19 National Institute of Environmental Health  
20 Sciences, the ICNIRP review, groups that have

Deposition of David Savitz

21 examined the biological evidence, experimental  
22 toxicological evidence regarding RF and health  
23 effects, potential health effects I should say in  
24 animal studies.

25 Q So going back you don't think the

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1 Savitz, Ph.D

2 conflicts of interest are relevant in assessing  
3 the quality of work of a study; is that correct?

4 A I think that if they are causing  
5 bias they are doing it through decisions that  
6 should be identifiable.

7 In other words, I'm not going to ask  
8 what was in their mind. I want to say what did  
9 they do in practice, is there evidence they did or  
10 did not do a good job in addressing the topic and  
11 we can certainly debate about that, but I just  
12 don't find it helpful to say what was in their  
13 mind. Why were they -- what was motivating them.  
14 I find it more important to ask what did they  
15 actually do, what did they actually find.

16 Q What are your criteria, filtering  
17 criteria for determining who you go to get updates  
18 in relevant new literature on RF radiation. Do  
19 you automatically discount new literature if  
20 people you rely on for methodological assessment  
21 haven't reviewed it or recommended them?

22 A Well, I suppose I can't do  
23 instantaneous updates as a new study comes out.  
24 It's got to be dependent on sort of the periodic

25 Deposition of David Savitz  
expert reviews in areas that are outside the ones

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1 Savitz, Ph.D

2 that I have a firsthand familiarity with, but I  
3 look to agencies that are, you know, that whose  
4 mission is to address these kinds of concerns.

5 I think you could say that the  
6 National Institute of Environmental Health  
7 Sciences, Health Canadian, the National Cancer  
8 Institute. These groups are, they exist in order  
9 to generate and evaluate scientific information  
10 that has bearing on the public health and by and  
11 large do a very good job of that.

12 Q You said earlier that RF  
13 microwave -- RF microwave radiation is more  
14 relevant to WI-FI radiation than are extremely low  
15 frequency fields; correct?

16 A Yes.

17 Q Which in your view is more relevant  
18 to WI-FI radiation, cell phone use of radiation or  
19 extremely low frequency field?

20 A I think by that reasoning the cell  
21 phone radiation is of more similar frequency.

22 Q Would you say that long-term  
23 exposure to power densities of RF radiofrequency  
24 microwave radiation that are in the same order of  
25 magnitude as Wi-Fi related power densities are

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1 Savitz, Ph.D

2 most relevant to both ambient and usage power  
Page 211

Deposition of David Savitz

3 densities of WI-FI in a school setting?

4 MR. CAMPBELL: Objection.

5 Vague.

6 Q Do you want me to restate that?

7 A I don't know that it will help.

8 Q Would you say that long-term

9 exposure to power densities of radiofrequency  
10 microwave radiation that are in the same order of  
11 magnitude as WI-FI related power densities are  
12 most relevant to both ambient and usage power  
13 densities of WI-FI in a school setting?

14 MR. CAMPBELL: Objection.

15 Vague.

16 A All I can say is that if they are  
17 more similar they are more relevant. I mean I can  
18 certainly make that point generally. Whether --  
19 again, how it applies here I'm not sure. If they  
20 are more similar power densities, more similar  
21 temporal aspects of exposure, surely it's more --  
22 readily more plausibly extrapolated.

23 Q Okay. Considering long-term school  
24 WI-FI and its related power densities, both usage  
25 and ambient, now consider studies that look at

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1 Savitz, Ph.D

2 long-term RF microwave radiation power densities  
3 in the same range as WI-FI ambient and usage power  
4 densities, would you say that such studies are  
5 most relevant to long-term WI-FI radiation  
6 exposure such as in the school?



Deposition of David Savitz

12 that produce positive studies for all I know and  
13 that's why when either individual or groups take  
14 on their mission of looking at it comprehensively  
15 again, it has to be comprehensive, the quality of  
16 the methods has to be incorporated.

17 The other aspect of the sort of, if  
18 you will, sort of hodgepodge of studies is that  
19 they are addressing very different end points,  
20 very different phenomena and they don't  
21 necessarily -- they aren't necessarily relevant to  
22 one another.

23 If you're going to ask a specific  
24 question is there an effect on catecholamines, the  
25 adrenergic system, whether I need to see all the

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1 Savitz, Ph.D  
2 studies lined up and look at the adrenergic  
3 system, that would have to be judged by somebody  
4 who understands that, the biology of that well.  
5 They would have to gather all the literature and  
6 they would have to make some informed judgment  
7 about whether there is evidence in the aggregate  
8 that supports it. There may be an isolated study.  
9 There may be a couple of studies. That doesn't  
10 mean that there is an overall body of support of  
11 evidence.

12 And so it's a way of saying that I'm  
13 accepting and I believe it's true that this is a  
14 relevant line of research to informing the, sort  
15 of setting the stage for epidemiology, providing a

16 Deposition of David Savitz  
context, but that has to be done not through  
17 anecdotes, but through a systematic comprehensive  
18 objective weighing of the evidence.

19 Q So you would agree that primary  
20 studies are important in making a decision like  
21 that?

22 MR. CAMPBELL: Objection.  
23 Vague.

24 A I'm saying that a group had the  
25 charge as various groups have of evaluating the

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1 Savitz, Ph.D  
2 experimental or toxicologic evidence relating to  
3 RF that they would need to obviously consider  
4 these and other reports relevant to biologic  
5 effects of RF.

6 Q Thank you.

7 Have the National Cancer Institute,  
8 Health Canadian and similar agencies published any  
9 reviews?

10 A Oh boy. I don't -- they have  
11 certainly made statements. I honestly don't  
12 remember, I can't tell you directly whether they  
13 have issued comprehensive reports or publicized  
14 comprehensive reports of that sort.

15 Q I'm going to show you what's marked  
16 Exhibits 4 through 14. If you could just quickly  
17 take a look at those and tell me if you're  
18 familiar with those organizations. Those were  
19 exhibits provided by your attorney.

20 A So far I've seen -- I'm familiar  
Page 215

Deposition of David Savi tz

21 with these, yes.

22 Q Did they publish any reviews any of  
23 those organizations?

24 A Well, clearly ICNIRP did publish a  
25 report.

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1 Savi tz, Ph. D

2 Q Pardon me?

3 A ICNIRP did publish a report.

4 Q What's that?

5 A Again it's a fairly large document  
6 that's a compilation of the laboratory research.  
7 When they published their guidelines they had  
8 documentation of that.

9 Q Uh-huh.

10 A The summary statements are based on  
11 a more comprehensive evaluation.

12 Q Okay. So if you -- if these  
13 organizations don't publish any reviews and don't  
14 provide any analysis as to where they support  
15 their decisions, why would you say that you can  
16 rely on such agencies when there are no such  
17 reviews and they don't publish what their support  
18 is?

19 MR. CAMPBELL: Objection.

20 Lack of foundation.

21 A Again they vary in how they document  
22 that and how they explain how they came to their  
23 decisions and they again rely on their own  
24 internal experts evaluating the information. They





Deposition of David Savitz

3 every agency was saying, no, it's exactly the  
4 opposite of what I think and obviously I would  
5 need to second guess that and revisit it.

6 The fact that these are  
7 corroborative, supportive, you know, adds some  
8 confidence that I'm seeing this in a way that's  
9 similar to the way most other experts are seeing  
10 it.

11 Q You said that you're confident that  
12 ICNIRP reviews and large international bodies  
13 aren't making up their conclusions.

14 So was IARC making it up when they  
15 declared RF a Class 2B carcinogen?

16 A No. That was the opinion of those  
17 who were on the committee obviously.

18 Q So --

19 A Based on their reading of the  
20 evidence they interpreted it differently than I do  
21 and others have.

22 Q And was Hardell making it up?

23 A I don't, they're not making it up.  
24 I'm not accusing anybody of data fabrication. I  
25 think there was a weighting of the evidence in a

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1 Savi tz, Ph.D  
2 peculiar way. I disagree with it, but that's  
3 okay.

4 That's not to say that they weren't  
5 going through a deliberative process and  
6 evaluating it, you know, in their way.



Deposition of David Savitz

12           A     You know, I think it's a thoughtful,  
13 appropriate, reasoned commentary. It's not --  
14 again I think, first of all, as they should they  
15 acknowledge the limitations in this as well as  
16 noting the strengths.

17                     They point out the problems that you  
18 had raised earlier about the potential  
19 incompleteness in identifying the subscribers, and  
20 again they put the results as a commentary should,  
21 they put it into context with other findings that  
22 have come before.

23                     As I've said, I don't think that the  
24 data indicating a reduced risk of overall cancer  
25 is damning. I think it's rather predictable and

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1                                     Savitz, Ph.D

2 is not an indication that negates the value of the  
3 study for looking at brain tumors or other  
4 diseases that are not as subject to that kind of  
5 selection.

6  
7                                     (Study entitled Residential  
8 Exposure to Magnetic Fields and Acute  
9 Lymphoblastic Leukemia in Children was  
10 marked as Deposition Exhibit No. 50  
11 for identification, as of this date.)

12           Q     I'm going to show you what's marked  
13 Exhibit 50.

14                     Can you please read the name of the  
15 study into the record?

16                   A       Deposition of David Savitz  
17       Residential Exposure to Magnetic  
18       Fields and Acute Lymphoblastic Leukemia in  
19       Children.

20                               The first author is Martha Linet,  
21       L-I-N-E-T.

22                   Q       And you cite this in your expert  
23       report; correct?

24                   A       I believe I do. It's one of the  
25       studies that was done after my work that -- one of  
      the major studies that came after that.

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1                               Savitz, Ph.D

2                               MR. CAMPBELL: This exhibit  
3       looks like it contains an amalgam of  
4       other reports as well.

5                               MR. ABRELL: That's okay. We  
6       can go forward.

7                               MR. CAMPBELL: I just want to  
8       make sure, there's is more to it --

9                               MR. MORGAN: This is a double.

10                              MR. CAMPBELL: -- New England  
11       Journal of Medicine.

12                              MR. ABRELL: Sorry. You can  
13       give me those back or take them out.

14                              MR. CAMPBELL: Beginning with  
15       the Ahlbom study.

16                              MR. ABRELL: Thank you. Thank  
17       you.

18       BY MR. ABRELL:

19                   Q       So are you familiar with this Linet  
20       study that you cited?



25                   A           Deposition of David Savitz  
                                  Again that was -- I'm not sure which

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1                                   Savitz, Ph.D

2   Ahlbom study you mean.  If you mean -- you mean  
3   the meta analysis, the pool of analysis rather.

4                   Q       Yes.

5                   A       Because they did individual studies  
6   in Sweden as well, but if the pool of analysis, he  
7   did a pool of analysis and another one was done  
8   independently by Greenland, et al., and they both  
9   found similar results using somewhat different  
10  methods.  But above as I said .3 or .4 microtesla  
11  there was evidence of an association with  
12  childhood leukemia.

13                  Q       So they did find association with  
14  childhood leukemia?

15                  A       Again, at the higher exposure  
16  levels, yes.

17                  Q       So it's -- and that would be above  
18  three or four milligauss?

19                  A       That's correct.  That finding has  
20  been there for some time now and it's very  
21  difficult to make a more sort of definitive  
22  assessment of whether there really is some impact  
23  of magnetic fields at that level, magnetic fields  
24  or whether it's some form of selection that is  
25  not -- we've not been able to control.

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1                                   Savitz, Ph.D

2                                   MR. ABRELL:  Okay.  We'll  
                                  Page 223

Deposition of David Savitz

3 switch the tape. Off the record.

4 THE VIDEOGRAPHER: The time  
5 now is 5:24 p.m. This marks the  
6 ending of Tape 5. Off the record.

7 (Whereupon, at 5:24 o'clock  
8 p.m., a recess was taken to 5:26  
9 o'clock p.m.)

10 (The deposition resumed with  
11 all parties present.)

12 D A V I D S A V I T Z, Ph.D., resumed,  
13 and testified further as follows:

14 THE VIDEOGRAPHER: The time  
15 now is 5:26 p.m. This marks the  
16 beginning of Tape 6. On the record.

17 BY MR. ABRELL:

18 Q Dr. Savitz, if you could turn to  
19 Page 15 to 16, Pages 15 to 16, Paragraph 31. You  
20 state that with cell phones there is exposure --  
21 well, hold on.

22 You state that their exposure is,  
23 with cell phones there is exposure directly to the  
24 head because the antenna is situated very close to  
25 the head during use so that the exposure comes in

1 Savitz, Ph.D.  
2 relatively short periods of more intense exposure  
3 rather than as a very low background exposure  
4 present throughout the school day.  
5 Can you be certain that a -- that a  
6 Portland -- Portland Public School student

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Deposition of David Savitz

12 through the senior year of high school?

13 A Again, it's the same answer.

14 Q Turning to Page 16, Paragraph 32a.

15 Scratch that.

16 Paragraph -- turning to Page 16,  
17 Paragraph 32a., you state that the distance from  
18 transmission towers is not an accurate surrogate  
19 for exposure and thus the studies that most --  
20 that most only indirectly assess any role of  
21 radiofrequency radiation and thus the studies at  
22 most only indicate indirectly assess any role of  
23 radiofrequency radiation.

24 Do you agree that radiated cell  
25 phone microwave radiation decreases rapidly with

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1 Savitz, Ph.D

2 distance from the antenna?

3 A Are you talking about -- are you  
4 talking about the cell phone itself?

5 Q Correct.

6 A My understanding is that it does.

7 Q Do you have any idea how rapidly the  
8 radiation decreases as the distance increases from  
9 the antenna?

10 A Again we're talking about the  
11 antenna from the cell phone, not the tower, the  
12 cell phone.

13 Q Correct.

14 A Because this is talking about  
15 transmission towers. No, I know I don't know the

16                   Deposition of David Savi tz  
rate of decline.  
17                   Q     How about the towers. Do you know  
18 what the rate of that decline is?  
19                   A     I only know in general terms that it  
20 depends on the topography of the land as well as  
21 the distance and it's not necessarily the highest  
22 and closest proximity.  
23                   Q     Could you say that one more time?  
24                   A     The rate of decline with distance  
25 depends on topography, the terrain of the land and

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1                   Savi tz, Ph. D  
2 it's not necessarily true that the highest  
3 exposure is the closest to the tower.  
4                   I don't know much beyond that,  
5 knowing only that it's more complex than simple  
6 matter of distance.  
7                   Q     Then tell me why you said in your  
8 expert report that distance from transmission  
9 towers is not an accurate surrogate for exposure.  
10                  A     Again, based on that understanding  
11 that the pattern of exposure is not predicted by  
12 the -- again, not well predicted by the distance.  
13                  Q     What would be an accurate surrogate  
14 for exposure from cell phone transmission tower?  
15                  A     Well, if you had accurate  
16 measurements of reliable calculations what the  
17 field would be to take into account distance and  
18 land and the nature of the transmission and so on.  
19                  Q     I would like you to turn to Page 17  
20 of the reply of Lloyd Morgan.

Deposition of David Savitz

21           A     Okay.  
22           Q     It states there, you will see Page  
23     16, Paragraph 32a., the distance, and he's quoting  
24     you, the distance from transmission towers is not  
25     an accurate surrogate for exposure and thus the

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1                                 Savitz, Ph.D  
2     studies at most only indirectly assess any role of  
3     radiofrequency radiation.

4                                 I'm going to show you what's marked  
5     Exhibit J. Can you please read the name of that  
6     study into the record, please.

7                                 MR. CAMPBELL: Fifty-one.  
8                                 (Study entitled Adult and  
9                                 Childhood Leukemia Near a High Power  
10                                Radio Station in Rome, Italy was  
11                                marked as Deposition Exhibit No. 51  
12                                for identification, as of this date.)

13           A     Adult and Childhood Leukemia Near a  
14     High Power Radio Station in Rome, Italy.

15           Q     This is probably referred to as the  
16     Vatican Radio study. Are you familiar with this?

17           A     Yes, I am.

18           Q     And are you aware that the Vatican  
19     Radio transmission study of children and adults in  
20     Rome, Italy shows mortality rates declined with  
21     increased distance?

22           A     Yes, I am.

23           Q     So would you still agree that  
24     transmission -- distance from a transmission tower

25 Deposition of David Savi tz  
is not an accurate surrogate for exposure?

267

1 Savi tz, Ph. D

2 A Just because mortality is related  
3 it's sort of backwards reasoning. If mortality is  
4 related it doesn't mean exposure is related. In  
5 other words, that's an independent question.  
6 Independent of what the results are, it's a  
7 question of how well they captured exposure.

8 I don't know the answer to that, how  
9 well they captured exposure, but it isn't -- it  
10 isn't demonstrated by the childhood leukemia  
11 mortality. That is not a demonstration that  
12 exposure varies, it's a demonstration that  
13 mortality varies.

14 Q If you turn to the next page.  
15 Mr. Morgan is summarizing the data from the  
16 Vatican study. It actually found that there was a  
17 six-fold risk for the increase in stated -- strike  
18 that. These charts -- are you aware that this  
19 study -- I'll come back to that.

20 If you turn to Page 17 of your  
21 report, paragraph 32d. You state the dozens of  
22 different diseases were considered across these  
23 studies, and there is little or no consistency as  
24 to which diseases are implicated. While several  
25 studies have found evidence of increased risk of

268

1 Savi tz, Ph. D

2 some disease, there was no consistent support for  
Page 229

Deposition of David Savitz

3 any specific disease across multiple studies.

4 Mr. Morgan and his reply to his  
5 expert report has found multiple studies of four  
6 specific diseases and for three of these diseases  
7 it includes studies funded by industry and  
8 independent -- and independently funded.

9 And if you look to paragraph -- Page  
10 18, Page 7, it refers to your quote at Page 17 and  
11 then he lists the studies for brain cancer. The  
12 studies are the Swedish team study which would be  
13 Hardell and the Swedish studies are consistent  
14 with what would be expected of cell phone or  
15 cause --

16 A I'm not sure -- these are not  
17 referring to the transmission tower studies. I  
18 believe these are referring to cell phone use  
19 studies and my statement there --

20 Q So you're quantifying your  
21 statement?

22 A Yes. I mean all of those -- I  
23 thought that was clear, but the subparts of Item  
24 32 in my report all pertain to transmission towers  
25 only.

269

1 Savitz, Ph.D

2 Q Page 20 of your expert report,  
3 Paragraph 41 says that you're being compensated  
4 for your work in preparing and testifying in this  
5 case in the amount of \$400 per hour.

6 A That's correct.

Deposition of David Savitz

7 Q And that this is consistent with  
8 your consulting fee in other cases which you have  
9 testified.  
10 What other cases have you testified  
11 in?  
12 A The ones I indicated there in Item  
13 40 on Page 20 are the ones I can remember in the  
14 last four years.  
15 You don't need me to repeat that or  
16 if you want me to try to recall going back four  
17 years ago.  
18 Q You say they are listed somewhere?  
19 A Paragraph 40 on Page 20 of my  
20 report.  
21 Q You said you listed what?  
22 A In the last four years as indicated  
23 there.  
24 Q Oh, I see.  
25 A The expert opinions.

270

1 Savitz, Ph.D  
2 Q I see now. What was your total  
3 billing to date on this case?  
4 A Oh, boy, you know, I honestly don't  
5 know that figure. I don't know if that's  
6 something that again --  
7 MR. CAMPBELL: If you know,  
8 you know.  
9 THE WITNESS: Pardon me?  
10 MR. CAMPBELL: If you know,  
11 you know.

Deposition of David Savitz

12           A     I don't really know. I don't have  
13 that material with me and I don't have the exact  
14 figure.

15           Q     Do you know approximately how many  
16 hours you billed?

17           A     Again, you know, as I said this is a  
18 ballpark would be, you said approximately, and  
19 that's what it would be approximately 20 hours, 25  
20 hours, something of that order.

21           Q     Okay. What has been the total  
22 amount you have received or will receive from all  
23 other consulting fees regarding this case and what  
24 was the source of these fees?

25           A     I'm not sure I understand.

271

1   Savitz, Ph.D

2   MR. CAMPBELL: Vague.

3           A     The only consulting I'm doing is  
4 involving this report and this material. There's  
5 no other --

6           Q     So aside from the Portland Public  
7 Schools you're not receiving any income from any  
8 other source regarding this case?

9           A     That's correct.

10          Q     Dr. Savitz, in your declaration you  
11 write, symptoms that are perceived to result from  
12 various forms of non-ionizing radiation have been  
13 reported for many years with some individuals  
14 claiming to be exceptionally sensitive to this  
15 exposure, but scientific evaluation of these



16 Deposition of David Savitz  
claims consistently failed to support them.

17 Are you aware that Sweden recognizes  
18 EHS as a functional disability in 2002?

19 A No, I don't know that to be the  
20 case, but it still doesn't change the statement  
21 about the scientific evidence.

22 Q Are you aware that Sweden makes a  
23 provision for this classification of sufferers by  
24 providing electrosensitized apartments?

25 MR. CAMPBELL: Objecti on.

272

1 Savitz, Ph. D

2 Lack of foundati on.

3 A I don't know anything about that.

4 Q Are you aware that the Canadian  
5 Human Rights Commi ssi on recognizes EHS as a  
6 functional disability in 2007?

7 MR. CAMPBELL: Objecti on.

8 Lack of foundati on.

9 A Again, as I said, I can speak to the  
10 scientific evidence. I can't speak to the  
11 regulations and the polici es.

12 Q Are you aware that the EU Parli ament  
13 voted in 2009 to recognize EHS as disabled?

14 MR. CAMPBELL: Objecti on.

15 Lack of foundati on.

16 A No.

17 Q What scientific studies did you  
18 review to support your comment that scientific  
19 evaluation of these claims consistently failed to  
20 support sensitivity to exposure?

Deposition of David Savitz

21           A     Again, I had maybe some more recent  
22 reports on that, but I had looked into this. It  
23 was actually a few years ago now to see whether  
24 there was the ability to replicate these findings  
25 in controlled laboratory settings where you can do

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1                                 Savitz, Ph.D  
2 human experimentation and at least again at that  
3 time there was not support for that. As I said,  
4 it may be that that's changed in recent  
5 literature, but I am not aware of it.

6           Q     Turning back to Page 18 of the  
7 Morgan reply. Are you aware that the Vatican  
8 Radio study found that death rates increased as  
9 distance from transmitters increases?

10          A     Yes.

11          Q     And roughly twice the death rate in  
12 children compared to adults constantly --  
13 consistently -- consistent to exposure to a  
14 carcinogen, a higher risk for children?

15                                 MR. CAMPBELL:  Objection.  
16                                 Lack of foundation.

17          A     I'm not sure I followed that part of  
18 it.

19          Q     So if they find that roughly twice  
20 the death rate in children compared to adults,  
21 isn't that consistent that exposure to a  
22 carcinogen is a higher -- a higher risk for  
23 children?

24          A     Again, I'm not sure if you are

25 Deposition of David Savitz  
saying that the children's death rate was twice

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1 Savitz, Ph.D  
2 that of adults. I mean that doesn't help in  
3 making the assessment or if you're saying that the  
4 children's death rate was more closely associated  
5 with distance from the transmitter.

6 I mean I don't, you know, there's a,  
7 I think a general sort of speculation about  
8 children being more, potentially more sensitive to  
9 environmental agents in general. That's sort of a  
10 general theory in principle.

11 I don't know that I would want to  
12 count on children being more responsive overall.  
13 Very often the groups that are at highest baseline  
14 risk are at highest increased risk from exposure.

15 Q I think we're almost done.

16 I'd like to show you what's marked  
17 Exhibit 52.

18 (Article entitled Germany  
19 warns citizens to avoid using Wi-Fi  
20 was marked as Deposition Exhibit No.  
21 52 for identification, as of this  
22 date.)

23 Q Are you aware that Germany has  
24 warned its citizens to avoid using WI-FI?

25 MR. CAMPBELL: Objecton.

275

1 Savitz, Ph.D

2 Lack of foundation.  
Page 235

Deposition of David Savitz

3 A I didn't know anything about that.

4 Q And what was the date of this  
5 article?

6 A September 9, 2007.

7 Q And can you read from the bottom of  
8 the page, please, the last paragraph?

9 A Starting the Environment Ministry?

10 Q Correct.

11 A The Environment Ministry recommended  
12 that people should keep their exposure to  
13 radiation from WI-FI as low as possible by  
14 choosing "conventional wired connections".

15 "It adds that it's actively  
16 informing people about possibilities for reducing  
17 personal exposure."

18 Q Going back to EHS, individual  
19 country reviews, are you aware that  
20 electrohypersensitivity was first described in  
21 Germany and called radiowave sickness in 1932 and  
22 have you reviewed S-C, Schliophake's 1932 paper,  
23 and that's spelled S-C-L-L-I-E-P-L-A-K-E,  
24 Schliophake's 1932 paper entitled Fields in the  
25 Short Wave Region published in -- are you familiar

276

1 Savitz, Ph.D

2 with that publication?

3 A This is again a very --

4 Q It's not in that.

5 A Okay. A very obscure literature  
6 you're getting into now and I would be very, and

7                                   Deposition of David Savitz  
8   it's possible, I would be very surprised at that  
9   time they were doing sophisticated research on  
10   this.

11                                I mean there is longstanding reports  
12   from, you know, Eastern European, Russia, other  
13   settings about various sorts of general health  
14   symptoms related to a whole range of exposures,  
15   but I would be -- again I have not seen anything  
16   that substantiates that as having scientific merit  
17   as a real entity.

18                    Q     Are you aware  
19   electrohypersensitivity was first described in  
20   Poland as microwave syndrome in 1964?

21                                   MR. CAMPBELL:  Objection.  
22                                   Lack of foundation.

23                    A     I don't know anything, again, about  
24   that.

25                    Q     Have you read the 1973 Polish paper  
26   by --

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1                                   Savitz, Ph.D

2                                   (Discussion off the record.)

3                    Q     Have you read the 1973 Polish paper  
4   entitled State of the Blood System under the  
5   Influence of SHF Fields of Various Intensities and  
6   Microwave Sickness?

7                    A     No, I have not.

8                    Q     Are you aware that the Russians  
9   described symptoms EHS as neurovegetative asthenic  
10   syndrome in 1964 and have you read the 2001  
11   Germany review by Hect, H-E-C-T, of these Russian

Deposition of David Savi tz

12 studies?

13 MR. CAMPBELL: Objecti on.

14 Lack of foundati on, compound.

15 A You know, thi s i ssue of the  
16 neuroasthenic syndrome, I remember reading about  
17 that. It seems that every exposure under the sun  
18 raised that complaint in Russian workers. Whether  
19 you can speculate about if they were not a happy  
20 lot, but it was everything from electricity to  
21 solvents, to work conditions, cold, heat, you name  
22 it.

23 And so again I've read some of those  
24 kinds of reports. There was just not a rigorous  
25 scientific approach in those settings.

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1 Savi tz, Ph. D

2 Q You have used the word concerned,  
3 speculate, and controversy over and over.

4 Is that kind of the mantra verbi age  
5 that's put out in the IARC or the ICNIRP?

6 MR. CAMPBELL: Objecti on.

7 Vague.

8 A I don't -- when I say a concern I  
9 mean there is public health concern, questions are  
10 being asked. I'm not sure -- I don't think that  
11 anybody originating that idea. It's just in the  
12 nature of these issues that are very visible in  
13 the media that are some people's minds, at least  
14 those are the ways I would describe that.

15 Q Speculati on, concern?

16 A Deposition of David Savitz  
Yes.

17 Q And controversial?

18 A Yes. Yes.

19 MR. ABRELL: I think that's  
20 all I have.

21 MR. CAMPBELL: All right. I  
22 have nothing here.

23

24

25 (Continued on next page.)

1 Savitz, Ph.D

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2 THE VIDEOGRAPHER: The time  
3 now is 5:49 p.m. This marks the  
4 ending of Tape 6. Off the record.

5 (Whereupon, at 5:49 o'clock  
6 p.m., the deposition was concluded.)

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Deposition of David Savitz

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C A P T I O N

3

4

The Deposition of DAVID SAVITZ, Ph.D., taken in the  
matter, on the date, and at the time and place set  
out on the title page hereof.

7

8

9

It was requested that the deposition be taken by  
the reporter and that same be reduced to  
typewritten form.

10

11

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14

The Deponent will read and sign the transcript  
of said deposition.

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C E R T I F I C A T E

3

4 STATE OF \_\_\_\_\_:

5 COUNTY/CITY OF \_\_\_\_\_:

6

7 Before me, this day, personally appeared  
8 DAVID SAVITZ, Ph.D., who, being duly sworn, states  
9 that the foregoing transcript of his/her  
10 Deposition, taken in the matter, on the date, and  
11 at the time and place set out on the title page  
12 hereof, constitutes a true and accurate transcript  
13 of said deposition.

14

15

\_\_\_\_\_

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DAVID SAVITZ, Ph.D.

17

18

19 SUBSCRIBED and SWORN to before me this \_\_\_\_\_

20

20 day of \_\_\_\_\_, 2012, in the

21

21 jurisdiction aforesaid.

22

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24

My Commission Expires

Notary Public

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Deposition of David Savitz

3 RE:  
FILE NO.

4 CASE CAPTION: AHM, et al. vs. PORTLAND PUBLIC  
5 SCHOOLS

6 DEPONENT: DAVID SAVITZ, Ph. D.  
DEPOSITION DATE: JANUARY 27, 2012

7  
8 To the Reporter:  
9 I have read the entire transcript of my Deposition  
10 taken in the captioned matter or the same has been  
11 read to me. I request for the following changes  
12 be entered upon the record for the reasons  
13 indicated.  
14 I have signed my name to the Errata Sheet and the  
15 appropriate Certificate and authorize you to  
16 attach both to the original transcript.

17 \_\_\_\_\_  
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24 SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

25 DAVID SAVITZ, Ph. D.

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I N D E X

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Witness:

Direct

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David Savitz, Ph. D

4

5

6

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C E R T I F I C A T E

STATE OF NEW YORK )

) ss.

COUNTY OF NEW YORK )

I, TINA DeROSA, a Shorthand  
(Stenotype) Reporter and Notary Public  
of the State of New York, do hereby  
certify that the foregoing videotaped  
Deposition, of the witness, DAVID  
SAVITZ, Ph.D. taken at the time and  
place aforesaid, is a true and correct  
transcription of my shorthand notes.

I further certify that I am  
neither counsel for nor related to any  
party to said action, nor in any wise  
interested in the result or outcome  
thereof.

IN WITNESS WHEREOF, I have  
hereunto set my hand this 6th day of  
February, 2012.

\_\_\_\_\_  
TINA DeROSA

