

Goldstein, Daniel 2019-04-16 Final Played in Court

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11:7 - 12:5

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GD2017.1

11:7 Could you please state and spell your
11:8 full name for the record, sir?
11:9 A. It's Daniel A. Goldstein,
11:10 G-o-l-d-s-t-e-i-n.
11:11 Q. Great. And you understand that you
11:12 are under oath, right, Mr. Goldstein?
11:13 A. I do.
11:14 Q. What's your understanding of that
11:15 oath?
11:16 A. My understanding is that I am sworn
11:17 to tell the truth to the best of my knowledge.
11:18 Q. And what is your current position at
11:19 Monsanto?
11:20 A. I am a Distinguished Science Fellow
11:21 and Lead for Medical Sciences and Outreach at
11:22 Monsanto.
11:23 Q. What does that mean?
11:24 A. It means I serve several roles
11:25 internally as a scientist. It means I have
12:1 responsibility in my own particular case for
12:2 product safety across all of our various product
12:3 lines, and I am also involved in outreach and
12:4 communications, primarily to medical and
12:5 professional organizations regarding our products.

12:19 - 13:10

Goldstein, Daniel 11-16-2017 (00:00:44)

GD2017.2

12:19 Q. (BY MR. ESFANDIARY) Okay. What
12:20 training or education do you have that allows you
12:21 to hold the position that you currently hold at
12:22 Monsanto?
12:23 A. I have an undergraduate degree in
12:24 molecular biology from the University of Wisconsin.
12:25 I did graduate work there in the field of genetics
13:1 but did not receive a graduate degree. Instead I
13:2 went on to medical school, Johns Hopkins
13:3 University, completed a residency in pediatrics at
13:4 Johns Hopkins and then moved on to Sick Children's
13:5 Hospital in Toronto, where I did a fellowship in
13:6 clinical pharmacology and toxicology.
13:7 Q. So you do have specific training with

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13:11 - 13:17	<p>13:8 respect to toxicology? 13:9 A. I have training specific to medical 13:10 toxicology. That is correct.</p> <p>Goldstein, Daniel 11-16-2017 (00:00:19)</p> <p>13:11 Q. Okay. And is medical toxicology, is 13:12 that like a -- is it subsumed under the general 13:13 umbrella of toxicology? 13:14 A. Medical toxicology is an official 13:15 specialty of medicine, like gastroenterology or 13:16 neurology would be. So it is a board certified 13:17 field of -- of medical study.</p>	GD2017.3
13:18 - 14:1	<p>Goldstein, Daniel 11-16-2017 (00:00:21)</p> <p>13:18 Q. Okay. And do you have any training 13:19 as it relates to epidemiology? 13:20 A. I have a great deal of training as to 13:21 epidemiology and statistics, but I do not consider 13:22 myself to be an epidemiologist per se. 13:23 Q. Okay. You understand that Monsanto 13:24 has selected you to represent the company for the 13:25 purposes of this deposition; correct? 14:1 A. Yes.</p>	GD2017.4
269:6 - 269:21	<p>Goldstein, Daniel 11-17-2017 (00:00:47)</p> <p>269:6 Q. (BY MR. ESFANDIARY) Dr. Goldstein, 269:7 these -- well, first of all, the Bates number on 269:8 the bottom right-hand corner of this document is 269:9 MONGLY00885870, and this was produced by Monsanto 269:10 Company in this litigation. And the date of the 269:11 document is July 22, 1997, and it is addressed To 269:12 the Communications Subcommittee, and the signatore 269:13 right there is John Acquavella. 269:14 You know Dr. Acquavella, correct, Dr. 269:15 Goldstein? 269:16 A. Yes, I do. 269:17 Q. And he is an epidemiologist; correct? 269:18 A. That is correct. 269:19 Q. Do you consider him a respectable 269:20 epidemiologist? 269:21 A. Yes.</p>	GD2017.5 GD16.1 GD16.1.1
270:19 - 271:10	<p>Goldstein, Daniel 11-17-2017 (00:00:36)</p> <p>270:19 Q. (BY MR. ESFANDIARY) Sure. And Dr.</p>	GD2017.6 clear

270:20 Acquavella, and this might be a bit before your
270:21 time in 1997, but he was an employee of Monsanto at
270:22 the time?

270:23 A. Yes, he would have been.

270:24 Q. Okay. And he is no longer an
270:25 employee, is he, sir?

271:1 A. That's correct.

271:2 Q. Yeah. He still consults for Monsanto
271:3 on kind of an ad hoc basis?

271:4 A. For a number of years he did not. He
271:5 was employed elsewhere and wasn't available for
271:6 consultation. He retired about two years ago and
271:7 has been doing some consulting work.

271:8 Q. Okay. And did you work closely with
271:9 Dr. Acquavella when he was at Monsanto?

271:10 A. Yes, I did.

271:16 - 272:3

Goldstein, Daniel 11-17-2017 (00:00:31)

GD2017.7

271:16 Q. Can I ask you, first of all, what the
271:17 Communications Subcommittee is? Is that a part of
271:18 Monsanto?

271:19 A. No, it is a part of Crop Life.

271:20 Q. Crop Life?

271:21 A. Yes.

271:22 Q. And what is Crop Life, sir?

271:23 A. Crop Life is an industry organization
271:24 that consists, its membership consists of pesticide
271:25 manufacturers and merchandisers.

272:1 Q. Okay. And obviously Monsanto is a
272:2 member of Crop Life; correct?

272:3 A. Yes, that is correct.

276:20 - 277:6

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GD2017.8

276:20 Q. (BY MR. ESFANDIARY) Sure. All
276:21 right. Well, back to the fun stuff.

276:22 Dr. Goldstein, if you could please
276:23 turn your attention to the page ending in Bates
276:24 number 871?

276:25 A. I need to look at the document for a
277:1 moment.

277:2 Q. Oh, please, yeah.

277:3 A. We have been talking about the

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277:4 - 277:7	277:4 background of it, but I haven't actually looked at 277:5 the document. 277:6 Q. Sure.	
277:7 - 277:7	Goldstein, Daniel 11-17-2017 (00:00:01)	GD2017.9
277:7 - 277:7	277:7 A. Okay.	
277:8 - 277:18	Goldstein, Daniel 11-17-2017 (00:00:28)	GD2017.10
277:8 - 277:18	277:8 Q. Actually, if you turn your attention 277:9 to the first page, the front, yeah, the face, and 277:10 if you look at the first paragraph of Dr. 277:11 Acquavella's comment there, it says, "At your last 277:12 meeting, I was asked to provide some background 277:13 thoughts on Epidemiology and the Agricultural 277:14 Health Study (AHS) that you could use to build 277:15 positive messages. Please find some preliminary 277:16 thoughts attached." 277:17 Did I read that correctly, sir? 277:18 A. Yes.	GD16.1 GD16.1.2
278:1 - 278:9	Goldstein, Daniel 11-17-2017 (00:00:35)	GD2017.11
278:1 - 278:9	278:1 Q. (BY MR. ESFANDIARY) Okay. If you 278:2 turn your attention to page 871. And about halfway 278:3 down the section titled The AHS rationale, Dr. 278:4 Acquavella says, "But, the viability and eventual 278:5 impact of the AHS will depend on the investigators' 278:6 ability to generate a new class of scientific 278:7 leads, most of which will be invalid." 278:8 Did I read that correctly, sir? 278:9 A. Yes, you did.	GD16.2 GD16.2.1
278:13 - 278:19	Goldstein, Daniel 11-17-2017 (00:00:13)	GD2017.12
278:13 - 278:19	278:13 Q. (BY MR. ESFANDIARY) And then right 278:14 after that, Dr. Acquavella says, "This has the 278:15 potential to be disruptive for the agricultural 278:16 chemical industry as new leads potentially take on 278:17 a life of their own." 278:18 Did I read that correctly, sir? 278:19 A. Yes, you did.	
278:21 - 278:22	Goldstein, Daniel 11-17-2017 (00:00:03)	GD2017.13
278:21 - 278:22	278:21 Q. (BY MR. ESFANDIARY) And what is your 278:22 understanding of what I've just read to you?	
279:1 - 280:15	Goldstein, Daniel 11-17-2017 (00:02:32)	GD2017.14
279:1 - 280:15	279:1 A. So this is essentially what I was	

279:2 saying previously. This is a study that is not
279:3 simply investigating one specific question. It is
279:4 a study that, over a long period of time, is
279:5 looking at many different questions, and it falls
279:6 into the category of what we would call exploratory
279:7 epidemiology.

clear

279:8 The problem you have with exploratory
279:9 epidemiology is that you're going to find a
279:10 significant number of statistical associations that
279:11 don't represent cause and effect. They're just due
279:12 to -- to statistical variation and the fact that
279:13 you're doing multiple types of testing.
279:14 And unfortunately, it's not just
279:15 agriculture. The public has ended up in -- in a
279:16 sea of these hypotheses of, you know, that Tylenol
279:17 causes asthma. You know, coffee and abortion.
279:18 These are all statistical associations from studies
279:19 that are not designed to test anything specific.
279:20 They're just looking for associations. They give
279:21 you an idea what may be true, but they have very
279:22 little ability to discern what is correct.
279:23 And that's the problem he's referring
279:24 to here. We know that exposures to pesticides are
279:25 low. We know that the vast majority of them have
280:1 been extensively tested for their carcinogenicity.
280:2 Their -- their exposures are limited by label
280:3 instructions and by -- by practices.
280:4 So looking at what we know about risk
280:5 of cancer relative to exposure, you shouldn't
280:6 expect to be able to find anything in the Ag Health
280:7 Study. And what John Acquavella is saying is
280:8 precisely correct. The vast majority of the
280:9 findings in the Ag Health Study are going to be
280:10 spurious statistical associations that will not
280:11 replicate themselves over time.
280:12 Q. (BY MR. ESFANDIARY) Okay. But you
280:13 agree with me, sir, that there's a difference
280:14 between coffee and abortion, and pesticides and
280:15 cancer; right?

280:18 - 280:19

Goldstein, Daniel 11-17-2017 (00:00:03)

GD2017.15

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281:2 - 281:11	<p>280:18 A. I'm going to have to have a more 280:19 specific question than that.</p> <p>Goldstein, Daniel 11-17-2017 (00:00:26)</p> <p>281:2 Q. (BY MR. ESFANDIARY) That's fine, 281:3 Doctor, I'll -- I'll explain. So earlier in your 281:4 answer you said that the public is kind of, you 281:5 know, in the midst of this miasma of, you know, 281:6 unwarranted concern because you have statistical 281:7 associations between coffee and abortion and you 281:8 equated that with, you know, what Dr. Acquavella is 281:9 apparently saying about the AHS and I'm wondering 281:10 whether coffee and abortion, in your eyes, are the 281:11 same as pesticide exposure and cancer.</p>	GD2017.16
281:15 - 281:24	<p>Goldstein, Daniel 11-17-2017 (00:00:25)</p> <p>281:15 A. The same in what regard? If you have 281:16 two false epidemiological studies, they're both 281:17 false epidemiological studies and they're giving 281:18 bad information to the public.</p> <p>281:19 Q. (BY MR. ESFANDIARY) Let me put it in 281:20 scientific terms. There is a plausible causal 281:21 association between pesticides, certain pesticides 281:22 and cancer; whereas, there is no plausible causal 281:23 association between coffee and abortion, is there, 281:24 sir?</p>	GD2017.17
282:4 - 282:11	<p>Goldstein, Daniel 11-17-2017 (00:00:21)</p> <p>282:4 A. You're incorrect. The perfectly 282:5 plausible explanation for why you might see 282:6 increased risk of spontaneous abortion with 282:7 caffeine, the plausibility of cancer being related 282:8 to pesticides in an epidemiological study is 282:9 actually far less than the plausibility of the 282:10 hypothesis around caffeine and spontaneous 282:11 abortion.</p>	GD2017.18
284:4 - 284:13	<p>Goldstein, Daniel 11-17-2017 (00:00:30)</p> <p>284:4 Q. Okay. And Dr. Acquavella says, "Most 284:5 of the diseases to be studied in the AHS have scant 284:6 reasoning to link them putatively to pesticide 284:7 exposure. Thus, much of the research can be termed 284:8 'exploratory.' That's not unusual in epidemiology, 284:9 but it is unusual on this big a scale."</p>	GD2017.19 GD16.3.1

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284:10	And my question to you is, sir, do	
284:11	you agree that the AHS broke with established	
284:12	epidemiological principles by embarking on a large	
284:13	exploratory cohort study?	
284:17 - 284:17	Goldstein, Daniel 11-17-2017 (00:00:02)	GD2017.20
284:17	A. No, I don't.	
284:20 - 285:12	Goldstein, Daniel 11-17-2017 (00:01:07)	GD2017.21
284:20	Okay. If you turn your attention to	
284:21	page ending in Bates number 873? Okay. And at the	GD16.4
284:22	top of the page there in the section titled	
284:23	Exposure assessment, Dr. Acquavella says, "The	GD16.4.1
284:24	exposure assessment in the AHS will be inaccurate.	
284:25	Exposure assessment will be based on historical	
285:1	usage as reported by the farmer or applicator on	
285:2	the study questionnaire(s). There are two problems	
285:3	with this approach: 1. usage does not necessarily	
285:4	mean exposure (work practices/equipment/	
285:5	environmental conditions determine exposure to a	
285:6	large degree); 2. recall can be faulty or biased,	
285:7	especially when historical usage information is	
285:8	collected. Attempts on verification over a 3 year	
285:9	period have found less than 70 percent agreement	
285:10	between purchasing records and reported usage."	
285:11	Did I read that correctly, sir?	
285:12	A. Yes, you did.	
285:16 - 285:17	Goldstein, Daniel 11-17-2017 (00:00:02)	GD2017.22
285:16	Q. (BY MR. ESFANDIARY) Dr. Goldstein,	
285:17	do you agree with this assessment?	
285:20 - 285:20	Goldstein, Daniel 11-17-2017 (00:00:00)	GD2017.23
285:20	A. Yes, I do.	clear
337:13 - 338:7	Goldstein, Daniel 11-17-2017 (00:00:55)	GD2017.24
337:13	Q. Good afternoon, Dr. Goldstein. My	
337:14	name is Gary Rubin, as you know, and I represent	
337:15	Monsanto in this litigation. I just have a few	
337:16	follow-up questions to ask. Same rules, if you	
337:17	don't understand my question, please ask me to	
337:18	explain it, I'll be happy to.	
337:19	Dr. Goldstein, over the past two days	
337:20	you have been asked a number of questions about	
337:21	what we've called the AHS; is that correct?	

Page/Line	Source	ID
	337:22 A. Yes.	
	337:23 Q. Okay. Can you tell the jury what the	
	337:24 AHS is, please?	
	337:25 A. So the Agricultural Health Study, or	
	338:1 AHS, is the largest study of farmers and pesticide	
	338:2 applicators and their health that has ever been	
	338:3 undertaken. It is performed by the National Cancer	
	338:4 Institute and has been going on now for nearly 25	
	338:5 years.	
	338:6 Q. Would you consider it a robust study?	
	338:7 A. It is --	
338:9 - 338:25	Goldstein, Daniel 11-17-2017 (00:00:41)	GD2017.25
	338:9 A. It is an extremely robust study. I	
	338:10 would consider it to be the most robust and	
	338:11 reliable data set that we have available.	
	338:12 Q. (BY MR. RUBIN) Okay. You looked at	
	338:13 a document this morning that Plaintiffs' counsel	
	338:14 showed you, I believe it was Exhibit 16, and I'll	GD16.1
	338:15 just give it to you to refresh your memory.	
	338:16 Do you remember looking at that	
	338:17 document?	
	338:18 A. Yes.	
	338:19 Q. And that document is dated 1997?	GD16.1.3
	338:20 A. That is correct.	
	338:21 Q. Okay. You were asked questions about	
	338:22 the methodology back then. Do you remember that?	
	338:23 A. Yes.	
	338:24 Q. Has the methodology changed since	
	338:25 1997?	
339:3 - 339:5	Goldstein, Daniel 11-17-2017 (00:00:05)	GD2017.26
	339:3 A. Yes, it has.	
	339:4 Q. (BY MR. RUBIN) What is the effect of	clear
	339:5 this change in methodology?	
339:7 - 339:7	Goldstein, Daniel 11-17-2017 (00:00:03)	GD2017.28
	339:7 A. The improvement in exposure metrics	
339:8 - 339:25	Goldstein, Daniel 11-17-2017 (00:00:50)	GD2017.27
	339:8 has addressed many of the concerns that were raised	
	339:9 in the 1997 document, and so I think with that	
	339:10 improvement in exposure assessment, it just	
	339:11 reinforces the fact that this is the most reliable	

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339:12 and robust data set available.
339:13 Q. (BY MR. RUBIN) Okay. Just so the
339:14 jury is absolutely clear, when was the most recent
339:15 AHS report issued?
339:16 A. Last week.
339:17 Q. Just in November of 2017?
339:18 A. Yes, that's correct.
339:19 Q. Okay. Have you had a chance to look
339:20 at that report and review it?
339:21 A. I have.
339:22 Q. And what did the report show?
339:23 A. That report showed no relationship
339:24 between user exposure to glyphosate and the
339:25 occurrence of any cancer type in humans.

340:1 - 340:5

Goldstein, Daniel 11-17-2017 (00:00:03)

GD2017.29

340:1 MR. RUBIN: I have no further --
340:2 THE WITNESS: Thank you.
340:3 MR. RUBIN: I have no further
340:4 questions for you, Dr. Goldman.
340:5 THE WITNESS: Thank you.

████████████████████
████████████████████
Total Time = 00:13:51

Documents Shown

GD16