UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

IN RE: ROUNDUP PRODUCTS LIABILITY LITIGATION
MDL NO. 2741
CASE NO. 16-MD-02741-VC

MONSANTO COMPANY'S NOTICE TO TAKE ORAL AND VIDEOTAPED DEPOSITION OF DR. MATTHEW ROSS

THIS DOCUMENT RELATES TO:

ALL ACTIONS

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VIDEOTAPED DEPOSITION OF
DR. MATTHEW ROSS

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APPEARANCES NOTED HEREIN

DATE: MAY 3, 2017
PLACE: MISSISSIPPI STATE UNIVERSITY
ALLEN HALL, 175 PRESIDENT'S CIRCLE
MISSISSIPPI STATE, MISSISSIPPI
TIME 9:33 A.M.

REPORTED BY: TODD J. DAVIS
BCR, CSR #1406, RPR

JOB NO. 123225

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Also Present: Eddie Nabors, Videographer
Dylan White, Esq. - MSU

INDEX

EXHIBITS:

(Exhibit No. 13-1 marked for identification.)
(Exhibit No. 13-2 marked for identification.)
(Exhibit No. 13-3 marked for identification.)

VIDEOGRAPHER: This is the deposition of Dr. Matthew K. Ross. This is the start of tape of DVD label number one of the videotaped deposition of Dr. Matthew K. Ross in Re Roundup Product Litigation. It is in United States District Court for the Northern District of California, Civil Action 16-MD-2741-VC.

The deposition is being held at Allen Hall, Mississippi State University, on May the 3rd of 2017, commencing at approximately 9:33 a.m.

My name is Eddie Nabors. I am the legal video specialist from TSG Reporting, headquartered at 747 Third Avenue, New York, New York. The court reporter is Todd Davis, also in association with TSG reporting.

Ask for counsel introductions on the audio portion, please.

MR. GRIFFIS: Kirby Griffis of Hollingsworth representing Monsanto.

MS. SHIMADA: Elyse Shimada of Hollingsworth representing Monsanto.

MR. TRAVERS: My name is Jeffrey Travers with the Miller Firm representing plaintiffs.

MS. WAGSTAFF: Aimee Wagstaff from Andrus Wagstaff in Denver, Colorado, representing the plaintiffs.

MR. WHITE: Dylan White representing Dr. Matthew Ross.

VIDEOGRAPHER: Will the reporter administer the oath, please.

MATTHEW K. ROSS, PH.D,

having been first duly sworn, was examined and testified under oath as follows:

MS. WAGSTAFF: So before we start, I would like to read something on to the record.

MR. GRIFFIS: Sure.

MS. WAGSTAFF: If you may. Just as an administrative matter, Mr. White and I are splitting a microphone which is clipped to a coaster between us, so we are proceeding hopefully that everything will be picked up by that microphone.

VIDEOGRAPHER: I am hearing you perfectly fine.

MS. WAGSTAFF: Excellent. Excellent. Secondly, Monsanto has requested that Dr. Ross's deposition to "explore the mechanism subgroups conclusion about glyphosate." They have requested this limited additional discovery, which the Court has allowed.

On April 18th, 2017, the MDL Court entered PTO 16, which said that, "Monsanto may subpoena Dr. Ross for 'fact deposition.'"

As such, plaintiffs will object to any expert testimony elicited by Monsanto or given to -- or given by Dr. Ross and will try to object as the questions are requested but present this general objection on the record before we begin.

MR. GRIFFIS: Anything else?

MS. WAGSTAFF: Nothing else. You may proceed.

MR. GRIFFIS: Yeah.

EXAMINATION BY MR. GRIFFIS:

Q. Yeah. I will address that.

Dr. Ross, have you been deposed before?

A. No. This is the first time.

Q. Okay. I am going to start by asking you to state your full name.

A. My name is Matthew K. Ross.

Q. And you are -- you have a Ph.D.?

A. I have a Ph.D.

Q. And in what, please?

A. It is in environmental toxicology, molecular toxicology.

Q. I'm going to go on and ask some more questions about your qualifications and do a

little housekeeping stuff like mark the legal documents that are going to be involved in this deposition.

We are going to be doing a number of things like marking documents, putting exhibit stickers on them, and then handing them to you. And the general format is that I'll be asking questions, and you'll be answering the questions.

I'm going to assume, if I ask you a question and you don't tell me that you haven't understood it, that you do understand it. And at times, your attorney may make an objection, or Ms. Wagstaff may make an objection.

If your attorney instructs you not to answer a question, then you're entitled to listen to him and not answer that question. Otherwise, it's your obligation to answer the questions that I've asked whether there's an objection or not.

Do you understand that, sir?

A. Yes.

Q. Okay.

MS. WAGSTAFF: I would object to the fact that he doesn't know when he doesn't understand you, but I understand your point.

MR. GRIFFIS: Sure.

The videographer has asked me to put on the record that his -- that although his instructions were to create a split screen video between me and you as a final production copy -- as going forward I have instructed him not to do that, but instead to make two videos. And we will clarify in post what we want done with those.

Presumably, we'll just take delivery of two videos, but in any event, his instructions were incorrect to that extent.

BY MR. GRIFFIS:

Q. I have marked as Exhibit 13-1 a subpoena to testify at a deposition in a civil action. It's called a notice of deposition. This was issued by Monsanto for your deposition here today, sir.

13-2 is a cross notice by the plaintiffs for the same deposition.

And 13-3 is a subpoena to produce documents, which I presume that you have seen before, sir. And I'm putting that into evidence because I will be asking some questions about it later and because the notice of the deposition

refers to it.

Have you seen any of those documents before, sir?

A. Yes.

Q. All three?

A. I have not seen this. No.

Q. Haven't seen the cross notice. But you have seen Monsanto's notice of deposition, and you have seen the original subpoena for documents to which you responded by producing some documents, correct?

A. Yes.

Q. Okay. And have you brought any -- other than your CV, which I'm about to mark as Exhibit 4 to this deposition, have you made any effort to gather documents for this deposition you didn't previously provide?

A. No.

Q. All right. Exhibit 13-4 is your CV.

(Exhibit 13-4 marked for identification.)

BY MR. GRIFFIS:

Q. Okay. That is a current copy of your CV, sir?

A. Yes.

Q. Would you please tell the jury your educational background?

MS. WAGSTAFF: Can I have a copy?

MR. WHITE: If you have another one, I'd also like to see.

Thank you very much.

A. So I received a bachelor of science degree in chemistry from UC Berkley in 1989. And then I received a Ph.D. in molecular toxicology from UC Irvine -- University of California at Irvine -- in 1998.

Q. Do you do bench research primarily, sir?

A. Yes.

Q. Would tell the jury what bench research is?

A. So the research I do is focused on analytical chemistry, bioanalytical chemistry, the study of how both environmental agents get metabolized in the body. In addition to how endogenous lipids get metabolized in the body.

Q. And what does bench mean in the terms of bench research?

A. Yes. Sorry. So bench research refers to work done in a laboratory under controlled

conditions. So we don't necessarily work with surveys or population surveys.

It is not epidemiological research. It's basic science done in a laboratory at the bench.

Q. And do you do work on experimental animals?

A. Yes.

Q. How much of your work is on experimental animals as opposed to in vitro?

A. I do mainly in vitro work. Mainly in cultured cells. Human cells, animal cells, and also in vivo studies in collaboration with other scientists at Mississippi State.

Q. And would you please explain to the jury in simple terms the difference between in vitro and in vivo. We just used both of those terms.

A. Sure. In vivo studies are studies that look at how a particular chemical may be metabolized within the body, within the human person, or in -- within an intact animal.

Those are studies that are performed so that you're looking at the whole system, the whole organism. In vitro studies are done in which cultured cells are used to study

various processes. It could be metabolism of a chemical. So in vitro is done in isolated cultured cells or what we call the subcellular fraction in which we obtain various parts of a tissue, but it is not the whole organism.

Q. And you mentioned both humans and animals when you described in vivo studies.

Do you perform studies in humans?

A. We use human cells. We use -- we use a cultured cell line that's derived from a -- from humans. We use tissues from humans. Primary cells that -- from actual human donors. So we use those types of materials from humans, yes.

Q. So those are all in vitro studies, though, not whole, intact human beings? They're done in --

A. Correct.

Q. -- essentially in a Petri dish?

A. Yes. In test tubes, Petri dishes.

Q. "In vitro" means in glass?

A. That's the Latin word.

MS. WAGSTAFF: I'm going to object to this, as it has nothing to do with the mechanisms, subverts, conclusions about glyphosate.

BY MR. GRIFFIS:

Q. With regard to in vivo studies done, have you done any in vivo studies in humans?

A. We -- let me see. As a bioanalytical chemist, I have looked at urine samples to measure pesticide metabolites.

Q. You have been involved as part of a team that was doing epidemiology work?

A. Correct.

Q. And what study or studies was that in connection with?

A. It was related to a study with permethrin.

Q. And what was the research group who was doing that study?

MS. WAGSTAFF: Same objection.

A. It was a research group here at Mississippi State.

BY MR. GRIFFIS:

Q. Have you been involved with the Agricultural Health Study?

A. I have been a member of their -- what do you call it? What is the right word? Their board that helps external advisory panel that -- that listens to some of their presentations.

Q. So you give scientific advice?
A. Correct.
Q. Have you performed any scientific work in connection with any of those studies?
A. No.
Q. Okay.
MS. WAGSTAFF: Same objection.
BY MR. GRIFFIS:
Q. Again, talking about in vivo studies only, sir, you told us that you don't do in vivo studies in humans. You don't run those yourself, at least, except to the extent that you may be involved in analyzing urine samples for pesticide residues, for example, as a part of someone else's epidemiology study.
Do you run in vivo studies in any species of intact animals?
A. In mice.
Q. Are you the primary researcher in those studies?
A. In collaboration with my colleague at Mississippi State.
Q. Okay. And you said that the majority of your work is in vivo work; is that right -- I'm sorry -- in vitro work?

A. The majority of my work, I would say, is done in vitro and in terms of bioanalytical chemistry of samples obtained from an intact animal like tissues or excreta from those animals.

Q. Have you done research on glyphosate?

A. No.

Q. That is true both before and after your involvement with working group 112, correct?

A. Yes.

Q. Okay. Working group 112 is the IARC group that looked into carcinogenicity of glyphosate and four other pesticides, correct?

A. Yes.

Q. Okay. I'm going to have a number of questions, obviously, today about your participation in IARC and how that came to pass, sir, and we'll turn to that in a moment.

First, I'd like to know, before you went to working group 112, before you went to Lyon, France, for that, did you know or had you met Christopher Portier?

A. I have never met him before volume 112.

Q. Didn't know who he was before?

MS. WAGSTAFF: Objection. This has nothing to do with the mechanisms, subgroups,

conclusions about glyphosate. Chris Portier is not even a monograph 112 member.

BY MR. GRIFFIS:

Q. Go ahead.

A. Did I know him? I knew -- I knew his brother. I did not know Christopher Portier. I had met his brother one other time.

Q. Okay. Before coming involved with working group 112, did you know Kurt Straif?

A. No.

Q. Before becoming involved with working group 112, did you know Phillip Landrican?

A. No.

Q. Did you know -- before becoming involved with working group 112, did you know Lauren Zeise?

A. No.

Q. Before becoming involved with working group 112, did you know Ivan Rusyn?

A. I knew of him. I knew of him, but I did not know him personally.

Q. You never met him?

A. I had never met him.

Q. Do you know how it was -- how it came to be that you were invited to participate in working group 112?

MS. WAGSTAFF: Objection. Calls for speculation.

A. I -- I think I became involved because of my experience in bioanalytical chemistry, in the area of toxicokinetics and metabolism, and extensive publications in organophosphate poisons.

BY MR. GRIFFIS:

Q. Do you know who whose -- who suggested your name to participate in working group 112?

MS. WAGSTAFF: Calls for speculation.

MR. WHITE: You can answer to the extent that you know.

A. I don't know.

BY MR. GRIFFIS:

Q. Were you ever told anything about why you were invited by anyone?

A. I don't recall.

Q. How did you learn that you were being invited to participate in working group 112?

A. I received an e-mail invitation from IARC.

Q. And about how long before the actual working group 112 convened in March of 2015 was that?

A. If I recall, I had an e-mail invitation

June 2014.

Q. And were there any rules imposed by the university on your consultation? Was there anything that you had to have cleared or approved before you could do that?

MS. WAGSTAFF: Objection. This is outside the scope of what Monsanto requested and what the judge allowed.

MR. WHITE: Again, only answer to the extent that you know.

A. The -- there was no stipulations. The only -- I only needed to get approval for international travel.

BY MR. GRIFFIS:

Q. Okay. So you got that approval, and you -- as far as you knew, there weren't any other requirements imposed by the university or clearances that you needed to get to participate in IARC working group 112?

MS. WAGSTAFF: Same objection.

A. There was -- no.

BY MR. GRIFFIS:

Q. All right.

(Exhibit No. 13-5 marked for identification.)

BY MR. GRIFFIS:

Q. Marked as Exhibit 5 an e-mail. And this is an e-mail that you produced to us during response to our deposition notice -- or our request for production of documents which is Exhibit 3.

This is from a Kathryn Forgie -- is that pronounced correctly -- who is a lawyer at Andrus Wagstaff, Ms. Wagstaff's firm, asking to meet with you.

And did you respond to this e-mail?

A. I don't -- I don't recall.

Q. You don't recall receiving the e-mail?

A. I do remember receiving this e-mail. I don't recall responding.

Q. Okay. Have you ever spoken to any lawyers other than Mr. White about your work on working group 112?

A. No.

MS. WAGSTAFF: Objection. Extremely vague. Any lawyers anywhere? What if he has friends that are lawyers.

MR. GRIFFIS: He has answered the question.

BY MR. GRIFFIS:

Q. Now, when did you first meet Christopher Portier, sir?

MS. WAGSTAFF: Objection. Again, outside the scope of the allowed deposition. Monsanto asked to explore the mechanisms, subgroups, conclusions about glyphosates. And Dr. Portier was not even on the monograph team.

MR. WHITE: Answer only to the extent that you know.

A. I met him the first time at Lyon, at the IARC meeting volume 112.

BY MR. GRIFFIS:

Q. At the introductory meeting?

A. At the first day of the meeting.

Q. And on the first day, there was an introductory welcome meeting where everybody got together, and there were some speeches; is that right?

A. I wouldn't call it speeches. Introductions of each member of -- and the panel.

Q. Did everyone sit down together, and people stood up and spoke a little bit about themselves or about one another by way of

introduction?

A. Yes.

Q. Did Mr. Portier introduce himself when he was talking about himself, or did anyone identify him as a current or former member of the Environmental Defense Fund?

MS. WAGSTAFF: Again, I am going to object -- have a standing objection to questions about Chris Portier. As I have said, before he was not even a member of the group, and he was not in the mechanism subgroup.

MR. WHITE: You're fine.

A. So he -- in the IARC list of participants, he had disclosed consulting for the Environmental Defense Fund. That was presented even before the meeting.

BY MR. GRIFFIS:

Q. You were given everybody's declaration of interests before the meeting?

A. Yes. There was a list of declaration of interests, and on that day, we had to sign if there had been any other conflicts of interest, potential conflicts of interest that needed to be disclosed on that very first day. There was a

form we had to sign.

Q. There was a supplemental declaration you filled out on the first day? How far before -- how long before the first meeting in Lyon did you receive other people's declaration of interests?

A. I believe -- if I recall, it was on the website of the IARC volume 112 meeting. When the participants are listed, their conflicts of interest were listed on that particular form that was on the website. I don't remember the time that showed up on the web, though.

MR. GRIFFIS: All right. Let's take five minutes so I can organize the next few exhibits.

VIDEOGRAPHER: Off the record at 9:55.

(A short recess was taken.)

(Exhibit No. 13-6 marked for identification.)

VIDEOGRAPHER: Back on the record at 10:07.

BY MR. GRIFFIS:

Q. Okay. Dr. Ross, I have marked as -- during the break, I marked as Exhibit 6 this deposition and handed you a copy of your declaration of interest for IARC working group

112, correct?

A. Yes.

Q. That's what that is?

A. Yes.

Q. Okay. On the third page of that document, in the box that says Nos. 5 through 6, you disclosed as one of your interests being on the advisory panel for the Agricultural Health Study; is that right?

A. Yes.

Q. And you wrote that you provided expertise on study design, data interpretation, and advice, correct?

A. Yes.

Q. When you were given information about other people's declaration of interests, including Mr. Portier's, did you see them in this form, or were you just given copies of other people's forms that they filled out?

A. I don't recall receiving their conflict of interests or declaration of interest in this form.

Q. In what form do you recall receiving it?

A. What is on the -- was on the website -- the IARC website for the meeting and the list

of -- the list of participants form that was at the meeting. Conflicts of interest were shown on that form.

Q. Okay. I want to mark this as Exhibit 7.

(Exhibit No. 13-7 marked for identification.)

BY MR. GRIFFIS:

Q. It is another document that you produced, sir, entitled -- headed "IARC International Agency for Research on Cancer," entitled, "Subgroup 4, working group members."

MS. WAGSTAFF: I'm just going to object that there's no Bates number on this or there's no production number or any sort of identifying number. But I assume it's authentic.

MR. GRIFFIS: It is.

BY MR. GRIFFIS:

Q. And this is a document that you received from IARC listing subgroup 4, working group members, sir?

A. It appears that way, yes.

Q. And you were on -- in working group 4 along with Dr. Rusyn as subgroup chair, correct?

A. Yes.

Q. Frank LeCurieux? Did I pronounce that right?

A. Uh-huh (affirmative response).

Q. Matthew Martin, William -- and Lauren Zeise. And invited specialist for subgroup 4 was Christopher Portier, correct?

A. Yes.

Q. And he's -- his affiliations here are listed only as retired; is that right?

A. Yes.

Q. Now, I've asked you about some of these people.

Did you know Mr. LeCurieux before joining working group 4?

A. No.

Q. Did you know Mr. Martin?

A. No.

Q. You met all of these people for the first time in Lyon; is that correct?

MS. WAGSTAFF: Objection to the form.

MR. WHITE: You can answer.

A. Yes.

MS. WAGSTAFF: You talking about in person that he met them before the meeting?

MR. GRIFFIS: Before being in Lyon is

what I'm asking.

MS. WAGSTAFF: Uh-huh (affirmative response).

A. I had not met them before Lyon.

MR. GRIFFIS: Okay.

(Exhibit No. 13-8 marked for identification.)

BY MR. GRIFFIS:

Q. Exhibit 13-8. I'm sorry. I shouldn't have said putting 13. We are putting "13-" in front of everything. But it's Exhibit 8 to this deposition. Sorry. Is a -- an overview of assignments for -- for group 4 for all of the substances being investigated; is that right?

A. Not only group 4. There --

Q. Yes, sir. All of the groups.

A. For -- for it appears to be all of the -- all of the four -- four groups.

Q. And would you quickly review for the jury what pesticides were being examined by working group 112?

MS. WAGSTAFF: Objection to scope.

A. First we worked on malathion, parathion, diazinon, tetrachlorvinphos and glyphosate.

BY MR. GRIFFIS:

Q. Now, do you know, sir, how those substances were selected to be reviewed by working group 112?

MS. WAGSTAFF: Speculation.

A. I don't.

BY MR. GRIFFIS:

Q. Did you learn at any time that glyphosate wasn't originally on the list?

MS. WAGSTAFF: Objection to foundation.

A. I had no knowledge of that.

BY MR. GRIFFIS:

Q. Okay. Did you learn at any time that Mr. Portier was involved in getting glyphosate added to the list?

MS. WAGSTAFF: Objection. Foundation.

A. I have no knowledge of that.

BY MR. GRIFFIS:

Q. Let's look at Exhibit 8, the assignments list, sir, and focus on glyphosate.

And this overview of assignments, what work -- what does it mean to be assigned a subsection?

A. So in my -- in my case, my responsibility was to review the toxicokinetic

data on glyphosate.

Q. And --

A. I was responsible for drafting the documents on the toxicokinetic data.

Q. And how far in advance did you receive your assignment with regard to glyphosate?

MS. WAGSTAFF: Objection to the form.

A. At approximately six months before the meeting, I received assignments.

BY MR. GRIFFIS:

Q. And what were you supposed to do in response to this those assignments?

A. We were charged with evaluating the published literature -- in my particular case, the toxicokinetic data on glyphosate in the published literature in publicly available literature and to synthesize a review of what is known regarding the toxicokinetics of glyphosate.

Q. And you prepared a written product from that, sir?

A. Yes.

Q. What was that written product?

A. It was the review of the toxicokinetic data regarding glyphosate.

Q. Was a draft of what ultimately became

the toxicokinetic data section of the IARC working group 112 monograph?

A. Yes.

Q. And did you have responsibility for writing sections for other substances, as well?

A. No.

Q. I see you listed under toxicokinetic data for tetrachlorvinphos?

A. Correct. So my charge was to write -- to review the toxicokinetic data for each of the five compounds that were being evaluated under volume 112.

Q. Okay. Before arriving in Lyon, in March of 2015, you were to prepare drafts of toxicokinetic data sections for malathion, parathion, diazinon, glyphosate, and tetrachlorvinphos; is that right?

A. Yes.

Q. And other people were doing the same for other sections, right?

A. Whatever was listed in this overview of assignments, that's -- that was their charge.

Q. When did you see other people's drafts in your subsection, in group 4?

MS. WAGSTAFF: Object to form.

A. We were asked to do peer review of certain sections. I did not do peer review of all the sections. We were assigned certain drafts to peer review before traveling to Lyon.

BY MR. GRIFFIS:

Q. How far in advance was that?

A. Approximately two to three months.

Q. With regard to glyphosate, which sections were you involved in reviewing?

A. Let me see here. I believe the one section that I peer reviewed for the meeting was 4.2.3 oxidative stress inflammation and the immune supression.

Q. Which was drafted by who?

A. Dr. Ivan Rusyn.

Q. Did you provide comments to that section?

A. Yes.

Q. During this process of preparing drafts and sending drafts, how were you sending and receiving drafts?

A. We used a server -- IARC server, IOPS system where we would upload drafts of the documents or peer reviews of a document that we needed to upload on to the server.

Q. And were you -- were you given a user name and password for IOPS?

A. Yes.

Q. And when you logged on to IOPS, what did you have access to from working group 112?

MS. WAGSTAFF: I'm going to object to the questions about drafts of IARC based on Judge Charbrio's (phonetic) order saying that IARC drafts are IARC property, immune from subpoena, pursuant to 22-USC-288-A, subsection B, and 919-F, sub 2B-43.

BY MR. GRIFFIS:

Q. Go ahead, sir.

A. Can you repeat the question?

Q. Sure. What did you have access to regarding working group 112 on IOPS?

A. So we could -- certainly, we would have access to our subgroup. We could access any of the documents that were being produced by the other subgroups if we wanted to read through them. So you could start looking at drafts before arriving in Lyon.

Q. Could you look at what studies had been tagged by your group and by other groups?

MS. WAGSTAFF: Same objection.

A. I don't recall.

BY MR. GRIFFIS:

Q. Did you participate in tagging studies for review?

A. For the toxicokinetic data, yes. I was charged with tagging some of the documents, yes.

Q. When you were given your assignment, had other people already tagged toxicokinetic documents for you?

A. No.

Q. So did you pretty much do all of the work of tagging toxicokinetic documents?

A. I believe I did.

Q. Was there a way for you to tag documents in other categories, or do you know?

A. I don't recall that. Whether I could tag documents in oxidative stress, I don't recall that.

Q. Okay. How -- if you wanted tay tag a -- and when we say tag a document, we're talking about a study?

A. Yes. A published study in the public -- in the publicly available literature.

Q. What was the process for tagging studies?

A. In my case, it was directly related to toxicokinetic data, whether it described the absorption, distribution, metabolism, and excretion of glyphosate.

Q. Yes, sir. I'm asking something a little bit different.

Let's say if you had a study in mind that you wanted to tag. What would you actually do on the computer to tag it?

A. We would evaluate the abstracts. And if it clearly looked relevant, we would tag them right then and there. If we were uncertain about the relevance, I would try to get access to the copy of the full article to -- if the abstract wasn't revealing to me enough about the relevance of the article, I would try to get a copy of the actual -- the full article to include it or not include it.

Q. Was there a box to check to tag or not tag documents?

A. We had some mechanism of including or excluding the study in our evaluation.

Q. Now, there was also an online system called the HAWC, H-A-W-C; is that right?

A. Yes.

Q. Okay. And were you given a user name and password for HAWC?

A. Yes.

MS. WAGSTAFF: Same objection. IARC drafts and work product.

BY MR. GRIFFIS:

Q. What was the difference between what you were doing on IARC and what you were doing on HAWC?

A. I don't recall. I don't recall the difference. I think the IOPS system was simply a way to upload documents, and HAWC was the software that allowed us to tag documents to include or exclude an evaluation.

Q. So the tagging would have actually been taking place on HAWC, and if you wanted to share a document with the group, it would go through IOPS; is that right?

A. I don't recall the specifics of sharing PDFs of the actual studies. I don't recall.

Q. Okay. Did HAWC also have tools for doing data analysis?

A. Not for the toxicokinetics.

Q. You didn't see any data analysis modules on HAWC for working group 112?

A. I don't recall ever seeing those.

Q. Did you see any modules that were -- could be used to manipulate or generate statistical analyses of data?

A. No.

Q. Okay. Did HAWC have capacities that you were aware of to process or store or display data from studies in any way?

A. Not that I am aware of.

Q. Okay. So if I want to summarize the IOPS and HAWC so perhaps we can move on from it, from what you used those two systems for, then, would have been, one, to tag literature in your assigned areas for these various documents, i.e., toxicokinetic data; and, two, with regard to the IOPS system to upload your draft sections on toxicokinetics and to download any drafts that you wanted to read that other people had done.

Is that right?

MS. WAGSTAFF: Objection. You're testifying. That record speaks for itself.

A. The HAWC system was used for tagging studies for inclusion or exclusion. And IOPS was used for uploading documents, and we could access other -- other documents in the -- in the IOPS

system, other drafts.
BY MR. GRIFFIS:
Q. And was there anything else that you used either of those systems for other than what we just talked about?
A. No.
Q. Okay. Explain to the jury what toxicokinetics is, please.
A. Toxicokinetics relates to the absorption, distribution, metabolism, and excretion of a particular chemical in the body.
Q. So it's -- is it a fair summary to say how a chemical moves through the body from start to finish?
A. Yes.
Q. Okay. And toxicokinetics were the only sections you were responsible for before showing up in Lyon; is that right?
A. Yes.
MS. WAGSTAFF: Object to the form.
BY MR. GRIFFIS:
Q. Would you have reviewed studies in the other working group 4 subareas like receptor mediated effects, altered self proliferation, cancer suseptibility data, et cetera, other than

toxicokinetics, of course, before showing up in Lyon?

A. I was charged with peer reviewing the oxidative stress drafts before showing up in Lyon.

Q. Did you review the oxidative stress drafts for all of the substances?

A. I don't recall.

Q. Did you have different assignments than oxidative stress from some of the other substances?

A. I did. I -- yes.

Q. Do you recall if you had one assignment for each substance -- one peer review assignment for each substance?

A. I don't recall.

Q. Okay. Do you recall about how many peer review assignments you had total?

A. I can't remember exactly. Maybe three, maybe four.

Q. How many hours of work do you think you put into the peer review of glyphosate oxidative stress section?

A. Two to three hours.

Q. And what did that -- those two to three hours of work entail?

A. Reading the draft and providing comments on the draft document.

Q. Did you review any of the studies?

A. That were in the draft?

Q. Yes, sir. In those two to three hours, did you actually read any of those studies that were cited therein?

A. I don't recall.

(Exhibit No. 13-9 marked for identification.)

BY MR. GRIFFIS:

Q. Dr. Ross, I marked as Exhibit 9 a working group 112 meeting timetable that you produced, and that is what's in front of you; is that right?

A. I didn't produce this. You mean -- what do you mean produced?

Q. I'm sorry. I'm being a lawyer when I say "produced." We asked you to provide us with documents that IARC -- and you turned those documents over, and I'll ask you a little bit more about how you did that exactly. But we ultimately received documents from you, and this is one of the documents that we received.

So this is one of the documents

that you provided to us in response to our document request which is Exhibit 3; is that right?

A. Yes.

Q. Okay. And this is a timetable that I take it you received from IARC for working group 112, right?

A. Yes.

Q. Okay. And it shows activities from the evening of March 2nd through the afternoon of March 10th of 2015, right?

A. Yes.

Q. Okay. And on March 2nd, the only activity is an evening meeting -- an evening planning meeting between meeting chairs and subgroup chairs only, correct?

A. That's correct.

Q. Were you involved in that?

A. No.

Q. Okay. Would you have first started meeting people on the 3rd?

MS. WAGSTAFF: Object to the form.

A. Yes.

BY MR. GRIFFIS:

Q. Do you remember when you got into Lyon?

A. March 2nd.

Q. Okay. And did you not head over to IARC until March 3rd?

A. Correct.

Q. All right. And when did you leave Lyon?

MS. WAGSTAFF: I am going to object to these questions. This has nothing to do with the requested discovery of the mechanisms, subgroup conclusions about glyphosate -- when he arrived and when he left Lyon. You're just badgering the witness.

BY MR. GRIFFIS:

Q. Go ahead, sir.

A. Wednesday, March 11th.

Q. Okay. And when you talked earlier about introductions, meeting people, was that during the opening session of March 3rd, sir?

A. Correct.

Q. Now, there were -- there were a number of subgroup sessions listed on the 3rd, 4th, 5th, 6th, and 7th of March.

What is a subgroup sessions?

A. These are the times where each subgroup meets together to evaluate the drafts.

Q. And there's also evenings of the 3rd,

4th, 5th, and 6th, something called a coronating meeting for the co-chairs and subgroup chairs, correct?

A. Yes.

Q. Were you involved in that?

A. No.

Q. Okay. And so the subgroup sessions -- there were 11 of them that you attended; is that right?

MS. WAGSTAFF: Objection. Foundation. Doesn't even show how it was followed.

A. There are 11 subgroup sessions listed on this.

BY MR. GRIFFIS:

Q. Did you go to all of them?

A. Yes.

Q. Were there subgroup sessions that were held that weren't listed on this on the itinerary?

A. We would meet to -- if there was an important topic that needed to be raised within the subgroup outside of this 11.

Q. What percentage of the working group 4's time was spent on glyphosate as opposed to one of the other four pesticides under review?

A. So we had five compounds. I would

estimate we spent 20 percent of them the time.

Q. About evenly divided?

A. Yes.

Q. And what percentage of that time would you have spent talking about the issues of genotoxicity and oxidative stress?

A. In the subgroup sessions a lot of the time was spent on those issues.

Q. Lot of the glyphosate time would been spent on those two issues?

A. Correct.

Q. Okay. All right. And who was involved on behalf of group 4 in coordination meetings?

A. You are referring to the meeting at the end the coordination meeting for cochairs?

Q. Meeting at the end of early of days the 3rd, 4th, 5th, 6th. That says coordination meeting for the cochairs and subgroup chairs?

A. That would have been our subgroup chair of group 4.

Q. Dr. Rusyn?

A. Dr. Rusyn would have been participating in those.

Q. Do you know if Chris Portier was at those?

A. I don't believe so. He -- no. I don't think he was.

Q. Did you witness people going off into those meetings, or were you off doing your own thing by then?

A. No. I didn't witness.

Q. All right. Mr. Portier is listed as an invited specialist for group 4. That's in the Exhibit 7, I believe, sir.

What was your understanding of what he was an invited specialist for, for group 4?

A. So Dr. Portier is a biostatistician, and he was invited as a specialist to help peer review the tox cast data that was being presented.

Q. For any other purpose?

A. Not that I am aware of.

Q. Did he speak to your group, address your group about issues other than tox cast data?

A. He acted as a peer reviewer.

Q. If he were to give an opinion to the group on the subject of biostatistics and a analysis -- a reanalysis of biostatistics, would you be qualified to evaluate the scientific merit of that opinion?

MS. WAGSTAFF: Objection. Calls for

speculation and hypothetical. You can't just say any opinion Chris Portier gives.

A. I'm not a biostatistician. It's not my area of expertise.

BY MR. GRIFFIS:

Q. Okay. So if Chris Portier or another biostatistician gives a biostatistics opinion, you wouldn't be qualified as a peer to second guess that opinion.

Is that fair?

MS. WAGSTAFF: Objection. Hypothetical. Calls for speculation. You don't know what opinion you're talking about.

A. Yeah. It would depend on the conversation. Clearly, I can understand the importance of statistical significance and whether an effect is statistically significant, but my area of expertise was on toxicokinectics.

BY MR. GRIFFIS:

Q. You were focused on the toxicokinetics during these conversations and not on biostatistics or the other areas listed.

Is that fair?

MS. WAGSTAFF: Objection. Misstates the record. That's not what the deponent said.

A. My main responsibility was the toxicokinetic sections.

BY MR. GRIFFIS:

Q. Were you asked by IARC to read their preamble.

Do you know what I'm talking about when I say the preamble?

A. Yes. And I did read it.

Q. Okay. You were asked by IARC to read that?

A. Yes.

Q. Okay. As part of your preparation for to participate in working group 112?

A. Correct.

Q. What was your understanding of the purpose for your review of the preamble and how it was to guide you if it was?

A. Repeat the question.

Q. Yes, sir. What was your understanding of -- I will make it a little simpler.

What was your understanding of why you were being asked to review the preamble?

A. It is a guiding document for how the meeting is run, how we evaluate the information, the data that we asked to review. And it provides

a rubric for how the classifications are made.

(Exhibit No. 13-10 marked for identification.)

BY MR. GRIFFIS:

Q. Marked as exhibit 10 is a copy of the IARC preamble.

That is what you reviewed, sir?

A. This says 2006. I don't know if there was a -- what -- if this was the actual document. But the preamble -- whatever they have on their website -- they have it on their website -- is what we read. And they had this a hard document -- a hard copy on the first day of the meeting.

Q. Okay. So everybody would have to read it in advance, and everyone was also given a hard copy on the first day; is that right?

A. Correct.

Q. Okay. And one thing you just told me earlier is that this provided a rubric for your evaluation.

Would you explain what you mean by a rubric for your evaluation?

A. In terms of mechanistics subsection, there were key characteristics of carcinogens that

were evaluated. There's ten key characteristics. And we were asked to provide -- as a subgroup to provide qualitative descriptors of strong, moderate, or weak in terms of the evidence for each particular character -- key characteristic.

Q. Okay.

A. It...

Q. Sorry. Were you done?

A. Yes.

Q. Okay. So there were ten key characteristics.

And these are different categories of mechanism; is that right?

A. These are -- yes. Different categories, different mechanisms by which a carcinogen may act to cause human cancer.

Q. Do you know the source of those ten characteristics?

A. There is an environmental health perspectives study or paper that lays out the ten key characteristics. It is in the published literature.

Q. Okay. Do you know when that was published?

A. I believe it was in 2016.

Q. Okay. Do you know if it was published before or after your working group met?

A. It -- this is -- the formal document came out in 2016, but the characteristics were listed on the IARC website where somewhere IARC had a listing of these key characteristics that the subgroup was charged with evaluating.

Q. Do you know if those had been submitted to the publication in peer review process before working group 112 met?

A. I don't recall that.

Q. It was published in 2016.

You don't know when might been peer reviewed; is that right?

A. I don't --

MS. WAGSTAFF: Objection. He said that the ten key characteristics were listed on the IARC website. That has nothing to do with whether or not it was published. Because some author decided to turn it into a publication is irrelevant.

BY MR. GRIFFIS:

Q. And the classifications that you could give for each of the ten characteristics were -- repeat them, please.

Weak?

A. The qualitative descriptors?

Q. Yes. The qualitative descriptors.

A. Those were weak, moderate, or strong. And those come from the preamble.

Q. Okay. And so for each of the ten -- so any study would be divided into one or more of the key characteristics and used to evaluate mechanism under the rubric of that characteristic; is that fair?

MS. WAGSTAFF: Objection. Misstates the testimony.

A. There -- the papers that were related to genotoxicity -- the evidence based on genotoxicity or oxidative stress were bin -- so papers within those -- since those are the two characteristics that were deemed strong, those papers were within each of those bins.

BY MR. GRIFFIS:

Q. Okay. And so it would be sorted into the ten bins. And then as to each bin, the group was asked to conclude one of three things: Weak, moderate, or strong; is that right?

MS. WAGSTAFF: Objection. Misstates the testimony.

A. We didn't -- if the evidence was weak, we didn't -- we didn't have to spend a lot of time on that evidence. If it was strong, there was a clearly -- in the monograph, there was a statement to that effect, that the evidence was strong based on the evidence -- the papers were deemed important.

BY MR. GRIFFIS:

Q. Well, all I'm asking you right now, though, is your three choices were weak, moderate, and strong, right?

A. Those were our descriptors.

MR. GRIFFIS: Okay. Take a break at this point.

VIDEOGRAPHER: All right. Off record at 10:44 a.m.

(A short recess was taken.)

VIDEOGRAPHER: Back on record, 10:56.

BY MR. GRIFFIS:

Q. Dr. Ross, you told us earlier that your group divided its time pretty evenly among the five substances that were being reviewed, including glyphosate.

So you estimated about 20 percent of your time was spent on glyphosate, right?

A. We spent approximately equal time on all compounds.

Q. So is it fair to say that your working group, when it was working together, did the equivalent of about a day's work on glyphosate during work group 112?

MS. WAGSTAFF: Objection. Misstates the record. Who knows what a day's work means.

A. We had several days on glyphosate.

BY MR. GRIFFIS:

Q. And those same days were also spent on other substances, right?

A. There were other substances discussed in a given day.

Q. When I say one day's work, I didn't mean to suggest to you set aside one particular day to focus on that and moved on. I was trying to get a sense of, over this week, how much total work went into it? Was it about a day's work --

MS. WAGSTAFF: Object to the form.

BY MR. GRIFFIS:

Q. -- divided over multiple days?

MS. WAGSTAFF: Same.

A. It was more than one day's work.

BY MR. GRIFFIS:

Q. Okay. There were --

A. Several days work.

Q. How many days -- during how many of these days was work done on? I am looking at Exhibit 9, the timetable.

A. It doesn't say which -- for each subgroup sessions, it doesn't say which compounds we were working on at the time.

MS. WAGSTAFF: I'm going to object also -- Dr. Ross said they met at night when needed.

BY MR. GRIFFIS:

Q. So there was actual work done on March 3rd, on March 4th, on March 5th, on March 6th, correct?

A. Subgroups, 3rd, 4th, 5th, and 6th, 7th, we met in subgroup. Those were the times we were meeting in subgroup. There was work being done on Sunday. There was reading over drafts. There was work being done in the evening.

Q. How many total -- on how many total days during your time in Lyon was work being done on glyphosate?

MS. WAGSTAFF: Object to the form.

A. I don't recall how many days. There were several days we were meeting to -- with each of the compounds. And I don't recall the exact number of days that we've -- that we were on glyphosate.

BY MR. GRIFFIS:

Q. Well, the 3rd through the 10th is seven days. Fair?

A. Yeah. Yeah. Eight days if you count Tuesday.

Q. Okay. Do we count Tuesday? Was substantive work done on Tuesday?

A. Yes.

Q. Okay. Eight days total were spent in Lyon doing this work, right? Five substances were involved. And you told us your work was divided evenly?

MS. WAGSTAFF: Going --

BY MR. GRIFFIS:

Q. Can we conclude that the amount of work done on glyphosate was eight divided by five?

MS. WAGSTAFF: I'm going to object to this question on the suggestion that all the work was done in Lyon. He has testified numerous times that months of work were put

into this prior to the meeting.

A. We had our assignments six months before the meeting. So there was six months of work being done before we met in Lyon.

BY MR. GRIFFIS:

Q. Yes, sir.

You testified you worked on the toxicokinetic data and that you did a peer review that took two to three hours of work. Let me -- let me clarify something. It's a point I made a little earlier, but I didn't ask you in that last question.

When the group was working together, in whole group work together, the total amount of time you could spent on glyphosate, given your testimony, working together, would have been eight days divided by five substances; is that right?

MS. WAGSTAFF: Objection. Misstates the testimony.

A. Repeat the question now.

BY MR. GRIFFIS:

Q. Okay. And let's first address the work before you showed up.

It would not have been the case

that the entire group was focusing on oxidative stress or the entire group was focusing on genotoxicity or the entire group was focusing on any other of the ten characteristics that were binned with regard to glyphosate prior to meeting in Lyon; is that right?

MS. WAGSTAFF: Objection. Dr. Ross can't testify to what other panelists were focusing on.

A. My focus was on the toxicokinetics. That is what I was responsible for. And I was responsible for peer reviewing the draft on oxidative stress prior to the meeting.

BY MR. GRIFFIS:

Q. So prior to the meeting, you spent about two to three hours peer reviewing the oxidative stress draft.

And other than that, you were focusing on solely toxicokinetic data prior to showing up at IARC, right?

MS. WAGSTAFF: Objection. Misstates testimony.

A. I was working on peer reviews of other compounds -- others than were not related to glyphosate.

BY MR. GRIFFIS:

Q. Okay. I do mean to limit myself to glyphosate in that question.

A. So the peer -- when I say the peer review takes two to three hours, that's just the reading of the document. That does not include the amount of time in responding point by point to the author.

Q. How much time did you take doing that?

A. Must have -- oh, at least a day. And I did -- I did look up some methodology papers and some of the -- some of the citations I did look up what type of method they were using for their oxidative stress measurements. So that would take some time, as well.

Q. How much additional time?

A. That probably would take about an hour to two hours look at that information.

Q. So about a day and half total work for the peer-review process work for oxidative stress?

A. Roughly, yes.

Q. Okay. And you've -- you were not focused on the genotox prior showing up in Lyon; is that correct?

MS. WAGSTAFF: Objection to the form.

A. I did not review the genotox --

BY MR. GRIFFIS:

Q. You weren't included -- sorry.

A. No.

Q. You weren't included in any discussions by the rest of the working group on genotox or oxidative stress or anything else that took place before showing up in Lyon; is that right?

MS. WAGSTAFF: Object to the form.

A. The oxidative stress I had a -- I had peer reviewed the draft before attending Lyon.

BY MR. GRIFFIS:

Q. Yes, sir. But the entire working group was not exchanging communications about the oxidated stress or genotox or anything else as a group prior to showing up in Lyon; is that right?

A. In terms of myself, I wasn't sharing except for the peer review of the oxidative stress. There may been others who had interactions before the meeting, but I am not aware of that.

Q. Can't have been the whole group because you were part of the whole group, and you didn't see it?

A. As a group, we met in Lyon to go through

the drafts. That was the first time we were all together.

Q. Okay. And as a group, the total amount of time you could have spent was about eight days divided by five substances on glyphosate; is that fair?

MS. WAGSTAFF: Object to form. He stated that they spent 20 percent of the subgroup session. He also stated they worked at night and evening. He never said that was 20 percent.

A. We -- there were some nights we would work on -- I would work on one compound through the night, glyphosate. So I can't -- I don't know the exact number of hours on glyphosate --

BY MR. GRIFFIS:

Q. Okay.

A. -- during the eight days.

Q. There were plenary sessions in addition to the subgroup sessions, correct?

A. Yes.

Q. What is a plenary session?

A. Where all of the four subgroups come together.

Q. And the first plenary session was on the

morning of Wednesday, March 4th, and it was called evaluation criteria, right?

MS. WAGSTAFF: I'm going to go ahead and object to questions about plenary sessions, as Monsanto had an employee there. And, also, the request for this deposition was to "explore the mechanism subgroup's conclusions about glyphosate."

A. The question -- repeat your question.

BY MR. GRIFFIS:

Q. Yes, sir.

The first plenary session on the morning of Wednesday, March 4th -- which is held on the morning of Wednesday, March 4th, was on the subject of evaluation criteria, correct?

A. Yes.

Q. Was the preamble presented and discussed at that session?

A. Yes.

Q. Who --

A. And it was presented on March 3rd, as well.

Q. All right. Who was the speaker or speakers at that session?

MS. WAGSTAFF: Same objection.

A. Dr. Straif.

BY MR. GRIFFIS:

Q. Dr. Kurt Straif?

A. Yes.

Q. And was he the only speaker?

A. As I recall, yes.

Q. What did Dr. Straif tell you about the criteria that you were to employ in evaluating the substances?

A. If it is in the preamble.

Q. So he told you that the methodology that should be applied during your review was what was set forth in the preamble, sir?

A. Yes.

Q. The next two plenary sessions, the mornings of the 5th and 6th were called progress report.

What happened at the progress report plenary sessions? I don't mean tell me everything anyone said. But, in general, what was the point of the progress report meeting?

A. A brief report on the previous day's meetings amongst subgroups.

Q. Did the subgroup chairs present at those meetings?

A. In general, yes.
Q. Okay.
A. It was the subgroup chair --
Q. Did anyone else --
A. -- present --
Q. Sorry.
A. I don't recall anyone else presenting.
Q. And what would the subgroup chairs -- what sort of thing would they report on? Let's just confine ourselves to mechanism.
What would Dr. Rusyn report on to the other groups?
A. So if --
MS. WAGSTAFF: Objection. Calls for speculation.
A. He would report on, in terms of the ten key characteristics, which of those ten might have evidence that would be considered strong, moderate, or weak.
BY MR. GRIFFIS:
Q. You were at all of these sessions, right?
A. Yes.
Q. Okay. The evening of Friday, March 6th, there was a plenary session called overview

discussion.

What was that about?

A. Plenary session overview was before the group as a -- as the plenary session, it was the -- it was the general overview of the evaluations of each compound. We had not met to go through the document line by line at that point.

Q. The two progress reports that we just talked about on the morning of the 5th and 6th were scheduled to be ten minutes long.

Were those, in fact, short meetings?

A. Yes.

Q. And then the evening session, the overview discussion was an hour and 45 minutes, right?

A. Yes, roughly. I don't remember the exact time.

Q. Okay. Now, while you were in Lyon, you were taking notes about the proceedings on the spiral bound notebook, and you produced some of those. Produced, again, meaning you turned them over to your lawyers, and they did what they did with them in response to request No. 3, right --

or Exhibit No. 3?

A. Yes.

Q. Okay. You had a spiral notebook, and you would take notes by hand as to what was happening that struck your interest.

Is that fair?

A. I don't -- the term "strike my interest," I -- that's not relevant.

Q. Okay. Well, you would choose what to write down and what not to write down, like anyone does who's taking notes is all I meant.

A. Yes.

Q. Okay. Exhibit 11.

(Exhibit No. 13-11 marked for identification.)

BY MR. GRIFFIS:

Q. What I've marked as Exhibit 11 is from your spiral notebook, and these are notes from the evening session on March 6th; is that right? Titled "plenary general remarks"?

A. Yes.

Q. Okay. Now, this notebook --

MS. WAGSTAFF: Objection. Those are from the evening session. There was two plenary sessions on March 6th.

BY MR. GRIFFIS:

Q. The morning session was ten minutes long, and the evening session was much longer.

Which one was this?

MS. WAGSTAFF: If you know.

A. I don't recall if it was from the morning or the evening.

BY MR. GRIFFIS:

Q. Okay. We have four pages of notes, right?

A. I don't recall which one it was from.

Q. Okay. This is from one of the plenary meetings of March 6th?

A. It's from March 6th. That's my...

Q. I'd like to talk about the notebook for a minute. Was this notebook only -- and these questions are about the process that you went through to respond to our request in document No. 3, the subpoena for production of documents.

Was this notebook devoted only to working group 112, or is it also a notebook that you used for other purposes?

A. It -- it was my -- it was a general notebook.

Q. So if we look back in February you might

have been writing about something you were doing in your lab or some other meeting that you went to; is that right?

A. Yes. You might have seen lab -- lab data that I had been working on.

Q. You --

A. Unrelated to volume 112.

Q. Sure. As one way of organizing your life, you keep a notebook keeping track of what you did and observed on various days?

A. Yes.

Q. Okay. So you pulled out the relevant notebook for when we provided you with that document request, Exhibit 3. You pulled out the relevant notebook and had copied the pages that pertained to working group 112; is that right?

A. Yes.

Q. Were there any notes from working group 112 that you didn't have copied?

A. I provided everything that I had regarding volume 112.

Q. You provided those to your lawyers?

A. Yes.

Q. Okay. And do you know whether they applied any selection process in deciding what to

send or not?

MR. WHITE: Only to your knowledge.

BY MR. GRIFFIS:

Q. Yeah. I am just asking if you know.

A. No. I don't know.

Q. Okay. And now let's go through your notes here, sir. Group 1, exposure.

Group 1 was the exposure group, right?

A. Yes.

Q. Who was presenting as the head of group 1?

A. In this regard, these progress reports are general remarks that would have been the subgroup chair.

Q. Do you remember who that was?

A. For exposure, I'd have to look at the participant list.

Q. Okay. We have it. It's Exhibit 8.

MS. WAGSTAFF: Exhibit 8 is the assignment list.

MR. GRIFFIS: Yeah. The assignments is the closest we have to one with group 1 on it.

BY MR. GRIFFIS:

Q. Does the assignment list help you with that?

A. I think the list of participants says who the subgroup chairs are.

Q. Okay. The list of participants that we had from you was just for working group 4.

A. Let me just find -- which exhibit?

Q. Exhibit 8 is the one I was talking about, the one with the blue and white -- I see it here.

A. Oh, this one.

Q. No. There.

A. Oh, this one. Okay.

Q. Just see if that helps you remember who the chair was.

A. Trying to remember. I don't recall the group 1 subchair.

Q. Okay. That's fine, sir. The group 1 chair, whoever that was, was reporting on exposure assessment as a yes/no process, correct?

MS. WAGSTAFF: Object to the form.

A. They -- yes or no? I don't know what you -- can you rephrase that?

BY MR. GRIFFIS:

Q. Well, you wrote yes/no.

What did you mean?

A. I don't recall what I meant there.

Q. Okay. And you mentioned the Agricultural Health Study.

What point was made at this plenary session about the Agricultural Health Study with prior exposure assessment?

A. I don't recall. I don't know what compound this is -- this is relates to, which of the compounds.

Q. If you'll see, sir, on the first two pages were devoted to what looked like general comments. And then the next two pages were talking about specifics of various compounds. You have compounds listed over and over again on the last two pages and compounds generally not broken out at the bottom of Page 1 early on.

So do you recall from this session being given, first, an overview of the processes that each group was going through and assessing the data and then some specific findings?

A. They were giving overviews at their evaluations of their drafts. I don't remember

specifics.

Q. The undergroup 2, which is epidemiology, do you recall that being headed by Aaron Blair?

A. Dr. Blair was the chair of the whole committee.

Q. Okay.

A. Of the whole group.

Q. Do you know Dr. Blair?

A. I had met him one other time as a -- as a member of the Ag Health Study. He was an emeritus faculty at NCI. I had met him one time before the Lyon meeting.

Q. Okay. And CI.

What is CI?

A. National Cancer Institute.

Q. NCI. Okay. Thank you.

So I saw on Page 1 of your notes from the March 6th plenary session, sir. And it mentions -- says group 2, epidemiology, and then Agricultural Health Study. And then there's a list of exposure assessments below for TCPBP. There's parathion, malathion, and glyphosate.

Are those the exposure assessments from the Agricultural Health Study?

A. No.

Q. What are they from?

A. Those -- those -- these five compounds. Those -- that doesn't relate to the Agricultural Health Study.

Q. What does it relate to?

A. I believe these were the preliminary evaluations of the epidemiology group.

Q. As to glyphosate, it says, "Limited for NHL and inadequate for multiple myeloma;" is that right?

A. That's right.

Q. Okay. Now, if you turn over to the section on group 3, animal studies, do you recall who was presenting for that?

A. The group -- the animal subgroup was led -- the subgroup chair was Dr. Jameson.

Q. Did you have interactions with the other subgroups other than sitting in on the plenary sessions?

A. We interacted at coffee breaks, yes.

Q. Okay. And I mean, other than rubbing shoulders socially, did you have substantive scientific interactions with the other subgroups?

MS. WAGSTAFF: Object to the form.

A. I was not involved in subgroup 3 or

subgroup 2 or subgroup 1 to any significant extent.

BY MR. GRIFFIS:

Q. Okay. So you didn't have any substantive scientific interactions with members of those other subgroups as part of working group 112.

Is that fair?

MS. WAGSTAFF: Object to the form.

A. My main responsibility was to evaluate the toxicokinetic data for the five compounds that were charged.

BY MR. GRIFFIS:

Q. Okay. So is the answer, no, you didn't have substantive scientific interaction with the other three groups?

MS. WAGSTAFF: Same objection.

A. I wouldn't call it -- we didn't have substantive talks. We had discussions. I would -- substantive. I don't know. I can't characterize. That's hard for me to characterize.

BY MR. GRIFFIS:

Q. And I don't know if this is the thing that's getting you tangled up, but I'm talking about as part of an analysis of carcinogenicity of

these five substances, what you were all there for.

Rather than talking scientist to scientist about something of mutual interest; that wasn't what you were there for, right?

MS. WAGSTAFF: Object to the form.

A. So I did not have substantive discussion with the group 3 scientists regarding the cancer bioassay data on glyphosate. My charge was toxicokinetics.

BY MR. GRIFFIS:

Q. And did you have substantive interactions with group 1 or group 2 with regard to the carcinogenicity of glyphosate or the issues they were evaluating with regard to glyphosate?

A. Not that it impacted any of the evaluations.

Q. Okay. Do you know if Dr. Rusyn had substantive interactions with other groups, particularly with group 3?

MS. WAGSTAFF: Objection. Speculation. How would he know what Dr. Rusyn did?

A. I can't recall.

BY MR. GRIFFIS:

Q. Did Dr. Rusyn talk about having such

interactions?

MS. WAGSTAFF: Same objection.

A. I can't recall him...

BY MR. GRIFFIS:

Q. When your group met each day, did Dr. Rusyn report on what had happened the evening before during the closed coordination meetings for the co-chairs and subgroup chairs?

A. Perhaps in general terms, but I -- I can't remember specifics.

Q. Okay. Do you know if Kurt Straif was present at those coordination meetings?

A. I can't speak for these coordination meetings. These are the evening coordination meetings between the subgroup chairs --

Q. Yes.

A. -- and the overall chair of the meeting? I can't speak because I wasn't present at those -- at those meetings.

Q. You didn't hear from Dr. Rusyn or anyone else about who was present or who was leading those meetings?

A. I presume Dr. Straif was there. But I -- again, I assume he was --

MS. WAGSTAFF: Objection.

A. Yeah.
BY MR. GRIFFIS:
Q. Okay. You would presume so, but you don't know?
A. I wasn't at the meeting.
Q. Yes, sir.
Under group 4, on the second page of your notes, sir, Exhibit 11, it says, "group 4," and then you wrote, "ten key characteristics of agents that cause cancer," correct?
A. Sorry. You're on page -- which page?
Q. Second page.
A. The second page. Okay. Ten key characteristics of agents -- yes.
Q. So this would have been a -- part of a presentation by Dr. Rusyn?
MS. WAGSTAFF: Objection. Foundation.
A. Yes.
BY MR. GRIFFIS:
Q. Okay. And the ten key characteristics of agents that cause cancer this is what you alluded to earlier as the ten bins into which you were to sort and analyze the mechanism of the evidence part of your methodology, right?
A. Correct.

Q. Okay. And now on the top of the third page, you again start listing group 1, group 2, group 3, group 4. And it appears that you've -- you're talking about the evidence that was presented as to parathion from 1, 2, 3, and 4, correct?

A. Yes.

Q. And then malathion?

A. Correct.

Q. And then diazinon?

A. Diazinon. Where is dizainon?

Q. The top of the next page.

A. Top of Page 4? Okay. Diazinon, yeah. Okay.

Q. Okay. And then towards the bottom of that page, you started talking about glyphosate, right?

A. Yes.

Q. Okay. Now, tetrachlorvinphos, was -- did you take notes on that and just not provide them to us, or not -- or what do you know?

A. There's something on TCBP. There's -- on Page 2, there's some -- I have some notes on TCBP.

Q. But not broken down by the four groups

like for the other substances, right?

A. No.

Q. Okay. Let's talk about the glyphosate notes on Page 4. Group 1. The report from group 1 share on glyphosate was -- that you wrote down was "detectable in water and food," correct?

A. Yes.

Q. Okay. For group 2, the report was glyphosate negative non-Hodgkin's lymphoma. Case control, glyphosate, arrow, non-Hodgkin's lymphoma, right?

MS. WAGSTAFF: Object to the form.

A. This -- this is what I wrote.

BY MR. GRIFFIS:

Q. And what's your recollection of what that meant?

A. I don't recall.

Q. Okay. And you also wrote AHS negative data, correct?

A. I did.

Q. And it is your understanding that AHS data was negative with regard to association with glyphosate?

MS. WAGSTAFF: Object to the form.

A. That is correct.

BY MR. GRIFFIS:

Q. And that is your understanding?

A. The AHS study. The AHS study, that was a negative result.

Q. Talking -- when you say the AHS study a negative result regarding glyphosate, are you talking about the DeRoos 2005 publication?

A. No. No. No. No.

Q. Tell me what you --

A. At AHS, there was a negative association, but there was a case control study that showed a positive association.

Q. Which study is that, if you recall?

A. I don't recall the citation.

Q. Okay.

A. But it's in the monograph.

Q. Yes, sir. Group 3. You wrote as your report from -- you wrote down from the group 3 report, "glyphosate limited to inadequate," correct?

A. Yes.

Q. Okay. So was it the finding of the group 3 group at that time that the evidence of carcinogenicity of glyphosate was limited to inadequate in animal studies?

MS. WAGSTAFF: Object to the form.

A. So I don't recall the specific discussion at this stage. This was early preliminary discussions. The meeting was only halfway through. So this was just a preliminary note in a plenary session.

BY MR. GRIFFIS:

Q. Yes, sir. Halfway through the group 3 -- group 3 had found limited to inadequate evidence of carcinogenicity of glyphosate, correct?

MS. WAGSTAFF: Object to form. There's no foundation that that's what group 3 actually found at that point.

A. I wasn't on group 3, so I wasn't privy to their discussions.

BY MR. GRIFFIS:

Q. That was reported to everybody at the plenary session; is that right?

A. I don't remember --

MS. WAGSTAFF: Objection.

A. -- the context, but this is what I wrote.

BY MR. GRIFFIS:

Q. Well, you participated in this, and you

attended multiple plenary sessions where you got progress reports.

Your understanding, halfway through, was that group 3 was trending towards limited to inadequate, as far as the animal studies point; is that correct?

MS. WAGSTAFF: Object to form and foundation.

A. They were only halfway through. They had not completed their evaluation. We hadn't even gone through the monograph as a whole -- as a -- in plenary session line by line. So I don't I -- I don't know which way they were trending at this point.

BY MR. GRIFFIS:

Q. What you wrote down from their report was "limited to inadequate," right?

A. That's what I have written down.

Q. And that would have been them, not you, because were not involved with group 3, as you just said?

A. My main focus was on the toxicokinetics in group 4.

Q. You didn't get involved with any evaluation of the animal studies.

Is that fair or not?

MS. WAGSTAFF: Objection to the word "involved."

A. I was not in subgroup 3 -- in their subgroup 3 discussions regarding the carcinogenicity of glyphosate in animals.

BY MR. GRIFFIS:

Q. Well, was the carcinogenicity of glyphosate in whole animals discussed in group 4?

A. I don't recall specifically. I don't recall whether the animal cancer bioassay data was discussed explicitly in our subgroup.

Q. Was human evidence -- by humans, I mean whole humans -- discussed in your group?

A. It wasn't in our subgroup.

MS. WAGSTAFF: Object to the form.

BY MR. GRIFFIS:

Q. I'm sorry. I didn't hear your answer.

A. We were focused on mechanisms. I was -- as a subgroup, we were focused on mechanisms. I was focused on toxicokinetics.

Q. For group 4 -- I'm going back to Exhibit 11 here, sir. For group 4, you just wrote glyphosate.

Do you recall what was being

reported as to group 4's findings at that point?

A. I don't recall.

Q. Okay. And can you tell the jury, since you were involved in all of these subgroup sessions for group 4, how group 4's thinking evolved over the course of work group 112?

MS. WAGSTAFF: Object to the form.

A. On which compound? On --

BY MR. GRIFFIS:

Q. Glyphosate.

A. Glyphosate?

Q. Yes, sir.

A. Okay. So the group was leaning towards looking at the data on the genotoxicity and oxidative stress of glyphosate and in evaluating that particular data. Because we concluded at the end -- by the end, we had concluded that the evidence was strong for those two key characteristics.

Q. Yes, sir. Over the -- over time, how did you evolve to the point of concluding there was strong as to those two characteristics?

A. I wouldn't use the word "evolve." I think the evidence was presented early on in the meeting that it was strong. I don't think there

was an evolution in that thinking.

Q. Okay. Were you always -- was your group always leaning towards the 2-A finding?

MS. WAGSTAFF: Object to the form.

A. Say that again one more time.

BY MR. GRIFFIS:

Q. Yes. The ultimate evaluation of IARC was to classify glyphosate as 2-A, correct?

A. That was the ultimate finding, yeah.

Q. And was that always group 4's view, or did that change over time?

MS. WAGSTAFF: Object to the form.

A. That was not always group 4's view, no.

BY MR. GRIFFIS:

Q. Tell me how --

A. Because we --

Q. -- group 4 changed over time.

A. Well, we don't make those evaluations in subgroup, like group 2-A or 2-B. Those are not made within the subgroup. Those are made as a whole, as a -- within plenary. Taking into account the human data -- the human epi data, the animal cancer bioassay data, and the mechanistic data. So evaluations are not made within individual subgroups.

Q. So your -- please correct me if I'm wrong.

But your task, as part of subgroup 4, the subgroup 4 task was to make an evaluation within the ten key cancer characteristics -- the ten bins that we talked about earlier as to weak, limited, or strong?

A. Correct.

Q. Okay. And then that would go to the group as a whole to see what to do with that information.

Is that fair?

A. We would give descriptors to the evidence regarding these to ten key characteristics and summarize that, and it would be presented to the preliminary group.

Q. And your conclusion -- I mean the conclusion you would present would be weak, limited, or strong as to each of those bins with rationale, of course, correct?

A. Which is in the monograph.

Q. Yes, sir. But am I correct that would be the evaluation?

A. Right. And that was -- that would be in the -- very clearly stated in the monograph, as it

was.

Q. And where is it written, if anywhere, how IARC evaluates the significance of a finding of strong for genotox and strong for oxidative stress?

A. Where is it -- explain what you mean.

Q. Yes, sir. Do you have some guidance for whether different substances are going to -- if evaluated in terms of the ten key characteristics of cancer, are different profiles, when divided among the key characteristics of cancer, right?

A. Yes.

Q. There are certainly substances for, example, for oxidated stress that show oxidative stress that aren't in fact carcinogens, right?

A. There are examples.

Q. And there are substances that are carcinogens that don't show oxidative stress?

A. But we're not talking about glyphosate here?

Q. No. No.

A. You are -- maybe this is hypotheticals now.

Q. It's true, though, correct?

MS. WAGSTAFF: Object as a hypothetical

and agree with the witness.

MR. WHITE: That's true. I've instructed my client not to answer any hypotheticals.

BY MR. GRIFFIS:

Q. Sir, when you were working with group 112, did you have any set of criteria by which you were to evaluate whether a substance was capable of causing human cancers based on the finding of strong or oxidated stress and strong for genotox?

A. We were instructed to evaluate the publicly available literature as a whole to determine whether there was strong evidence, moderate evidence, or weak evidence that glyphosate may cause oxidated stress or glyphosate may induce genotoxicity.

So we were instructed to look at the whole -- to the whole database and to draw conclusions whether the database was strong, moderate, or weak.

Q. When you say the whole database, you are referring to published literature and not to any industry studies that were conducted in GLP labs, correct?

MS. WAGSTAFF: Object to the form.

Suggestion that no industry studies that were conducted in GLP labs were part of the published literature?

A. We had access to the publicly available literature. It is my understanding that there were some industry studies that EPA had that we could get access to.

BY MR. GRIFFIS:

Q. Did you get access to them?

A. This for -- talking about the cancer bioassay data, they had access to EPA data.

Q. Do you know of any -- I'm going to use the term "registration study."

Do you know what that means?

A. For EPA. For data provided by the company to EPA for registration purposes.

Q. Did you look at any registration studies in reaching your evaluation about the mechanism?

A. I don't recall.

MS. WAGSTAFF: Object to the form.

A. There's -- I don't recall. The person who was looking at the genotox data may have, but there was data that was unavailable to the working group that Monsanto had access to.

BY MR. GRIFFIS:

Q. Do you know that there were publications presenting a great deal of that data, that Hyer & Kirkland published an article that was not reviewed by IARC?

A. And the reason was the committee couldn't evaluate the methodology that those studies used. They just presented a summary of findings without publishing the methodology involved. So independent scientists would have a very difficult time of determining the veracity of that data.

Q. And do you know what the methodological gaps that were listed in -- I mean in the IARC monograph, it says, we didn't look at the Hyer & Kirkland data because we couldn't evaluate A, B, C, D about the methodology.

Could you evaluate A, B, C, and D from all of the studies you did review from the published literature methodology fully set forth in those study?

A. For the -- I can only speak for the toxicokinetic data because that is what I was responsible for.

Q. Okay. You can't say as the genotox or

oxidated stress?

MS. WAGSTAFF: Objection asked and answered. He has given his response.

A. For the genotox and oxidated stress because I did not write those drafts. So I didn't look at every single one of those papers.

Q. Yes, sir.

A. I don't know -- I assume the -- for a paper to be brought forward and, especially if it was deemed to be a strong paper in terms of providing evidence for a mechanism, the -- you would need to see the methodology that was utilized in the statistical analysis and so forth.

So I'm -- I can't speak to that. I can't speak directly to that because I was not involved in the draft of that document, but this is publicly available literature. And it would be important for the reviewers for the -- for the committee to have that methodological information to evaluate the paper.

Q. Do you know who made the decision not to use the Hyer & Kirkland information?

A. I don't know who specifically was responsible for doing that.

Q. Who did you learn -- from whom did you

learn that that decision had been made?

A. I believe that it was -- it came up in plenary. And I don't remember if it was Dr. Straif or Dr. Guyton who determined that.

Q. Your belief is that it was either Dr. Straif or Dr. Guyton who rejected the Hyer & Kirkland data?

MS. WAGSTAFF: Object to the form.

A. Yeah. The specialist in the subgroup who worked on the genotoxicity would have been involved in that decision, as well.

BY MR. GRIFFIS:

Q. Okay. And do you know that, or is that just speculation?

A. I don't know for sure, but that's -- I assume the person who had -- who was in charge of that area would have been involved in discussions regarding that review paper, the cure paper.

Q. Who was that?

A. Who was the genotox specialist?

Q. Yes, sir.

A. On our subgroup?

Q. Yes, sir?

A. Dr. LeCurieux.

MS. WAGSTAFF: I am going to object to

this line of questioning. He's -- the deponent has said he doesn't know the answer. And he's also used the word that he's assuming. So I'm going to object for speculation.

MR. WHITE: And I'd like to add that you don't have to make any assumptions.

MR. GRIFFIS: What time is it?

MR. WHITE: 11:41.

MR. GRIFFIS: So we've been going an hour.

VIDEOGRAPHER: 44 minutes.

(Exhibit No. 13-12 marked for identification.)

BY MR. GRIFFIS:

Q. Okay. Dr. Ross, I handed you a document that you provided to us. It is an e-mail exchange between you and Dr. Michael Alavanja.

Is that pronounced correctly?

A. Yes.

Q. Okay. And would you please tell us who Dr. Alavanja is?

A. He was the principal investigator of the Agricultural Health Study at the National Cancer Institute.

Q. In this thread, he announced that he was retiring from NCI, correct?

A. Yes.

Q. Okay. You sent him your best wishes and then talked a little bit about AHS and the IARC meeting, correct?

A. Right.

Q. Okay. And do you know him through your role on the AHS, the advisory committee?

A. Correct.

Q. Is that the only way you know him, or did you have a prior relationship, as well?

A. Not before that.

Q. Okay. And you told him indeed the AHS worked out a prominent role at the IARC meeting I attended, right?

A. Yes.

Q. What did you mean by that?

A. Many of their studies were being evaluated at the meeting.

Q. And was it your understanding, from attending the plenary sessions and hearing the epidemiology group and exposure group talk about the Agricultural Health Study data, that it was important to their evaluation?

MS. WAGSTAFF: Objection. Dr. Ross stated he didn't -- wasn't involved in those subgroups. And, also, the Agricultural Health study involves other chemical besides glyphosate, which is outside the scope.

BY MR. GRIFFIS:

Q. Go ahead, sir.

A. The AHS studies was not just on glyphosate. There were other chemicals being evaluated, some of which were the organophosphates at the volume 112 meeting. So there was -- this is what I mean by AHS had a prominent role at the meeting.

Q. When you said a prominent role, you weren't talking about glyphosate? You were talking about the other substances?

MS. WAGSTAFF: Objection. Misstates the testimony.

A. I was talking about in general.

BY MR. GRIFFIS:

Q. Okay.

A. The AHS work in general.

Q. Did it have a prominent role with regard to glyphosate?

A. Well, it -- its data was evaluated in

the glyphosate -- in the evaluation of glyphosate. That study was evaluated.

Q. The whole group met to put all of this together, put the whole evaluation together to talk about all of the data, right?

A. The whole -- the whole group, yes. Sure.

Q. Yes. And was it your understanding from those meetings the AHS data was important to the evaluations of the glyphosate by the other groups?

MS. WAGSTAFF: Objection.

A. I wasn't in group 2.

BY MR. GRIFFIS:

Q. Talking about the meetings.

Everybody had to go together?

A. I can't recall that.

Q. You were at glyphosate issue -- back to Exhibit 12 and your e-mail to Dr. Alavanja.

"The glyphosate issue kind of blew up after we had finished and left," correct? What did you mean by it kind of blew up?

A. There was a lot of press.

Q. Then you said, "Although, it was the rodent cancer bioassays, in the case of glyphosate that was really the most controversial issue for

glyphosate," right?

A. That's what I've written.

Q. What did you mean?

A. There was debate going on within the cancer bioassay subgroup regarding whether it was deemed to be sufficient or limited. So there was debate -- scientific debate at the meeting --

Q. You --

A. -- regarding those -- that issue.

Q. You considered that to be the most controversial debate that was going on that you were aware of with regard to glyphosate at IARC 112?

A. Yes.

Q. Okay. And it was between limited or sufficient with regard to cancer bioassays for animals?

A. Yeah. I -- yes. It was -- it is that issue.

Q. And did you know who was advocating for limited and who was advocating for sufficient?

A. I don't remember. I can't recall.

Q. Okay. Do you recall anyone who was advocating for limited or sufficient?

A. No.

Q. Okay.
A. I wasn't privy to their conversations.
Q. Okay. Now, as a member of the AHS advisory group, are you made aware of the content of the data that hasn't been published?
MS. WAGSTAFF: Objection.
BY MR. GRIFFIS:
Q. That data they continue to collect hasn't been published?
MS. WAGSTAFF: His role as an AHS advisory member is outside of the requested discovery of the exploration of the mechanism subgroup's conclusion about glyphosate.
A. I don't receive any unpublished data from AHS.
BY MR. GRIFFIS:
Q. Do you receive -- you were giving them advice about things, right? Did they ever ask you whether you think something should be published?
A. No.
Q. What sorts of things did they ask for advice about?
A. We -- I have only met with them one time. They would ask studies -- they would ask opinion -- you know, ask us our opinion. And in

my case, they would ask my opinion about issues of measuring pesticide, residues, and issues of mechanistic mechanisms by which chemicals might cause cancer, mutations in cancer.

Q. Did you have an understanding, from your review of the preamble, your attendance at the evaluation criteria meeting, all the training you got on IARC methodology, that if the epidemiology evidence, evidence of group 2 is below limited, then the substance in question gets a group 3 classification?

MS. WAGSTAFF: Objection. Calls for speculation. Foundation.

BY MR. GRIFFIS:

Q. Do you recall that?

A. So if -- yeah -- wait a minute. The human epi, if it was deemed to be inadequate, and the animal cancer bioassay data -- well, it's -- we are speculating now because that is not what happened.

Q. Well, let's take a look at the preamble, Page 23.

You reviewed and understood the preamble, correct?

MS. WAGSTAFF: I'm actually going to

object also, this is causing for a hypothetical that is completely unrelated to the mechanism subgroup conclusion about glyphosate. You're actually proposing a hypothetical on what happens if the epidemiology has a different classifications as to what it ultimately determined.

MR. GRIFFIS: Well, I will link it up. Don't worry.

BY MR. GRIFFIS:

Q. Page 23.

A. Uh-huh (affirmative response).

Q. You see, the criteria for an evaluation of group 3, "This category is used most commonly for agents for which the evidence of carcinogenicity is inadequate in humans and inadequate or limited in experimental animals," right?

A. Correct.

Q. Okay.

MS. WAGSTAFF: I'm going to object to you're saying that that is a "shall make" determination.

MR. GRIFFIS: Let me finish, please.

BY MR. GRIFFIS:

Q. "And, exceptionally, agents for which the evidence of carcinogenicity is inadequate in humans but sufficient in experimental animals may be placed in this category when there's strong evidence that the mechanism of carcinogenicity in experimental animals does not operate in humans," right?

A. That's what the preamble says.

Q. In group 4, "This category is used for agents for which there is evidence suggesting lack of carcinogenicity in humans and in experimental animals," right?

A. Yes.

MS. WAGSTAFF: Continue to object on the scope, as it seems as you're trying to elicit expert testimony.

BY MR. GRIFFIS:

Q. Sir, did you know that Dr. Aaron Blair was deposed in this litigation?

A. Yes.

Q. Did you talk to Dr. Blair about being deposed?

A. No.

Q. Do you know about that fact that he was

deposed?

A. I found it in the court records.

Q. Did a little research when you heard you were going to be deposed?

A. We are scientists. It is publicly available.

Q. Did you know Dr. Blair disclosed that the AHS has seven more years of follow-up data than that that was presented to IARC and that that data, which involves many more cases than has been previously published in DeRoos in 2005, the article that was considered by IARC, is strongly negative for non-Hodgkin's lymphoma and that if that data had been put into the meta analysis and was done by the epidemiology group, the relative risk would have been below 1.0. About 0.9.

Did you know that?

MS. WAGSTAFF: Objection. Misstates the -- Dr. Blair's testimony and is completely irrelevant. And you're doing a hypothetical upon hypothetical.

MR. WHITE: You can answer as to whether or not you were aware that that was...

A. No. I wasn't aware of that.

BY MR. GRIFFIS:

Q. Okay. Do you know what relevance the findings of the mechanism group would have in the presence of negative human epidemiology in the absence of a limited association?

MS. WAGSTAFF: Objection. Calls for a hypothetical. If it was presented in this particular monograph 112, then that is appropriate, but I think you're exploring hypotheticals that are inappropriate to the scope.

BY MR. GRIFFIS:

Q. Go ahead, sir.

MR. WHITE: You can answer as far as you have factual knowledge of a yes or no, but you do not need to go into any details of a hypothetical.

A. The mechanistic subgroup can upgrade or downgrade if -- if it needs to. So I -- since that wasn't the issue in this case, then, I don't know what else I can add.

BY MR. GRIFFIS:

Q. Well, this is a question about the -- your understanding of the methodology applied by IARC in doing its classifications and how

mechanism fits into that. What --

A. But then I have to go into a hypothetical.

Q. What is the role of mechanism in the absence -- in the presence of negative human epidemiology? Negative, not limited.

MS. WAGSTAFF: Objection. Hypothetical.

THE WITNESS: So should I answer this hypothetical?

MR. WHITE: You can answer it to the extent that you -- that you know under this evaluation, under the way that you were instructed.

A. Right. So if it was inadequate in humans, sufficient in animal, and we had strong evidence in mechanism -- mechanistic evidence, then we could call for an upgrade to upgrade the classification.

BY MR. GRIFFIS:

Q. To 2-A?

A. If it was inadequate -- yes. Look at -- you can look in the preamble. Okay.

Q. Show where it shows the inadequate evidence in human --

A. Page 22, line 35. "In some cases, an

agent may be classified in this category, being 2-A, when there is inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals and strong evidence that carcinogenesis was mediated by a mechanism that also operates in humans."

Q. What strong evidence was presented in the IARC monograph working group 112 that carcinogenesis observed in experimental animals is mediated by a mechanism that also operates in humans?

MS. WAGSTAFF: Objection to the monograph. It speaks for itself.

A. The mechanistic evidence that was deemed strong was the genotoxicity and the oxidative stress classification. You know, just those characteristics.

BY MR. GRIFFIS:

Q. So just the fact of finding genotoxicity and oxidative stress suffices to show this is a mechanism that operates in humans.

Do you have to be more specific than that?

A. Because the findings, the data, were obtained in exposed humans in cultured cells -- in

vitro human cells -- cultured in vitro, exposed to glyphosate. And in some animal models, in vivo there was evidence of carcinogenicity -- or excuse me. Take that back -- of genotoxicity.

The important thing, in terms of operable in humans, is the fact that exposed humans showed evidence of genotoxicity, and cultured cells of human origin showed evidence of genotoxicity. Those were -- those then showed that this mechanism may operate in humans.

Q. You would agree with me that genotoxicity does not mean carcinogenicity, right?

MS. WAGSTAFF: Object to the form.

A. As -- not all genotoxins lead to cancer.

BY MR. GRIFFIS:

Q. And that is because there are multiple additional steps that have to take place before cancer is produced, right?

A. Yes.

Q. Geno toxicity would have to lead to a permanent mutation in order to cause cancer, correct?

MR. WHITE: I'm going to object. At this point, we're moving beyond the scope of IARC, and we're asking for expert testimony.

You don't have to answer that.

BY MR. GRIFFIS:

Q. Sir, in order to reach a conclusion that the genotoxic mechanisms that you identified as part of working group 112 can operate in humans, there would need to also be evidence that those genotoxic mechanisms would lead to permanent mutations, not just temporary, transient ones, correct?

A. The evidence would be stronger if it was permanent mutations.

Q. If there was evidence -- if, in fact, the evidence was not consistent with permanent mutations, than the genotoxic mechanism that you observed couldn't produce cancer in that way, correct?

MS. WAGSTAFF: Objection. Calls for a hypothetical.

A. I don't know. I can't say anything to that. I don't know.

BY MR. GRIFFIS:

Q. That wasn't part of your evaluation?

A. Well, if it leads to DNA damage, this could lead to genomic instability and cancer. So just to rule out DNA damage is not causing -- DNA

damage can lead to mutations.

Q. And DNA damage might not lead to mutations, as well?

A. It depends on the context.

Q. There are all sorts of analyses and assays that are done to look for actual mutations such as AIMS test, right?

A. There are.

Q. Okay. And that evidence is negative for glyphosate?

A. It is in the monograph. Whatever the AIMS assay showed, it's in the monograph, whether it was positive or negative.

Q. You don't know?

A. I think for the AIMS assay, the data for glyphosate is negative.

Q. Yes, sir.

MR. GRIFFIS: We'll break now then for lunch?

VIDEOGRAPHER: Off record at 11:59.

(A lunch recess was taken.)

VIDEOGRAPHER: Back on record. This is DVD three at 1:05.

(Exhibit No. 13-13 marked for identification.)

MS. WAGSTAFF: Just for completeness of record, we had the phone line open all day, and we don't believe anyone has called in; and no one has made a peep.

BY MR. GRIFFIS:

Q. Dr. Ross, I hand you Exhibit 13. And that is an e-mail from Dr. Rusyn to you at Martin and Frank LeCurieux -- did I pronounce that right?

A. Correct.

Q. Dated February 27th of 2015, correct?

A. I am just looking for the actual e-mail here. Let's see. Which page is it? Is it -- from -- that's from Kate Guyton and Ivan.

MS. WAGSTAFF: I'm just going to put an objection on the record that there is a document that was produced or provided by Dr. Ross. It is a more complete cascade of this conversation. And the fact that it's not to all of those folks. It's just to Dr. Guyton.

BY MR. GRIFFIS:

Q. You see the top of this document?

A. I got cc'd on it.

Q. Okay. And Dr. Rusyn responded to Kathryn Guyton and cc'd you and suggested that you

take a look at some of the subjections that were attached to that document, right?

A. Yes.

Q. And the document in question was the Greim published article; is that correct? Greim 2015?

A. I am not familiar with that article. I think -- is this the article with the -- there were several studies summarized?

Q. Yes, sir. A summary of multiple animal studies. Greim, et al., 2015.

A. Okay.

Q. And Dr. Rusyn forwarded that to you with the suggestion that you take a look at the small vignettes that are relevant to your subsection on mechanistic data; is that correct?

A. Yes.

Q. Dr. Rusyn said, "With regard to the Greim article, this is an interesting prelimical piece," correct?

A. Yes.

Q. And did you view the Greim article as a prelimical piece?

A. I didn't have an opinion on it.

Q. He said -- Dr. Rusyn said, "It does not

surprise me that, when under pressure, the industry can muster a relevant publication." He put relevant in quotes. "It goes from submission to acceptance in as little as seven weeks," correct?

A. That's what is written there.

Q. Okay. And what did you understand him to mean by the industry being under pressure?

MS. WAGSTAFF: Objection. Calls for speculation.

A. I didn't know what he -- I didn't know what he meant by that.

BY MR. GRIFFIS:

Q. Now, you worked with Dr. Rusyn closely during working group 112 and got to know him and his style of working, right?

A. I got to know Dr. Rusyn.

Q. Okay. And is his sarcastic tone towards industry consistent with your experience working with him on working group 112?

MS. WAGSTAFF: Object to the form. There's nowhere on here that it says it's sarcastic.

A. I didn't find him sarcastic. I found him objective.

BY MR. GRIFFIS:

Q. Did you find this paragraph -- "This is an interesting prelimical piece. It does not surprise me that, when under pressure, the industry can muster a 'relevant' publication. It goes from submission to acceptance in as little as seven weeks. Kudos to CR-2, a known helper to 'informative' publications from the industry stakeholders for such expediency and relevancy."

You don't find that to be sarcastic?

MS. WAGSTAFF: Objection. If you want to know if it's sarcastic, you need to ask the person who wrote it and not someone who is merely cc'd on the document. This is beyond the scope of -- of the subgroup's determination on glyphosate.

A. I don't have an opinion.

BY MR. GRIFFIS:

Q. Did Dr. Rusyn express any views about industry to you during working group 112?

A. No.

Q. Did he express any views to you about whether he felt that the chemicals that you were investigating should be more strongly regulated

than they were during working group 112?

A. No.

Q. Okay. He said at the end of his e-mail, "I am confident that the IARC monograph will be much more comprehensive and balanced," correct?

A. Yes. That's written here.

Q. And the IARC monograph did not include the Greim article or the studies discussed therein, correct?

A. Right.

Q. Did not discuss the Hyer & Kirkland article or the studies discussed therein, correct?

A. Correct.

Q. Okay. Now, you're aware, because of the correspondence that you were a signatory to following IARC, that there are a number of regulatory agencies that have also done reviews of glyphosate both before and after the IARC review; is that right?

MS. WAGSTAFF: Objection. This is completely beyond the scope. Anything that happened after IARC is not allowed by the scope of the order allowed by Judge Charbrio and MDL.

A. So -- okay. Is your question did I know

of anything before the meeting?
BY MR. GRIFFIS:
Q. No, sir. Question is, because you were a signatory to some letters, following IARC, you are aware that regulatory agencies have also done reviews of glyphosate, both before and after working group 112 met?
MS. WAGSTAFF: Objection. Again, this is completely beyond the scope of what is allowed by this deposition. The regulatories -- decisions have nothing to do with the mechanism subgroup's conclusion of glyphosate, especially when you're talking about after monograph 112.
A. So I was not aware of EFSA doing their regulatory review until after it came to light --
BY MR. GRIFFIS:
Q. Yes, sir.
A. -- that I understood what was going on there. So I am aware that regulatory agencies have been reviewing glyphosate, yes.
Q. And are you -- and you're aware, because it's part of the substance of the letters that you signed, that those reviews involved a review both of the published literature and the unpublished,

right?

MS. WAGSTAFF: Again, this is completely beyond the scope of what's allowed, and this is an abuse of the order that Judge Charbrio entered allowing exploration of the mechanism subgroup's conclusion about glyphosate. You're asking about letters that happened after monograph 112, and you're asking about regulatory agencies which haven't even been allowed in this litigation.

MR. WHITE: Yeah. At this point, I'm going to instruct my client that he does not have to answer these. It's not -- if it's not brought back to the actual monogram.

MR. GRIFFIS: I'm bringing it back.

MS. WAGSTAFF: I think he was instructed that he didn't have to answer it.

BY MR. GRIFFIS:

Q. Do you know that Dr. Jameson testified today that he wasn't shown the Greim article -- Dr. Jameson?

MS. WAGSTAFF: Objection. We don't have any authority or any foundation that that's true. And we have no idea what the testimony question was asked or what was said. That's

pure speculation. How would he know that?

MR. WHITE: You don't have to answer that.

BY MR. GRIFFIS:

Q. Do you know if Dr. Jameson was shown Greim?

MS. WAGSTAFF: Objection. Speculation.

MR. GRIFFIS: Okay. I'm going to mark another document.

(Exhibit No. 13-14 marked for identification.)

(Exhibit No. 13-15 marked for identification.)

MS. WAGSTAFF: Did you highlight these, Kirby, or is it --

MR. GRIFFIS: This is how we have it.

MS. WAGSTAFF: Okay. Wait.

MR. WHITE: We have two -- 14 and 15?

MR. GRIFFIS: Yes, sir.

MS. WAGSTAFF: Which one do you want as 14?

MR. GRIFFIS: 14 is that one.

BY MR. GRIFFIS:

Q. This is from the documents that you provided to us, sir. Okay. Marked as Exhibit 14

is some comments by Chris Portier on a response by EFSA to a letter sent by Portier and others.

And 15 I marked because it's the -- it has numbered paragraphs also supplied by you. Numbered paragraphs that link up to the numbered paragraphs in Mr. Portier's --

MS. WAGSTAFF: I'm again going to object. The request for this deposition was to explore the mechanism subgroup's conclusions about glyphosate. And that is what the Court allowed as a fact deposition. And now you are asking about something that happened in January 13th, 2016, which is a year and a half after the conclusion came out. And I think it's a completely inappropriate line of questioning.

MR. GRIFFIS: It links directly to the procedures used by IARC at the group.

BY MR. GRIFFIS:

Q. I just want to ask you about one comment by Chris Portier, sir.

This is a document that you recognize that came from your production, right?

MS. WAGSTAFF: You're talking about Exhibit 14?

MR. GRIFFIS: Yes.

MS. WAGSTAFF: Okay. I object as to foundation. This is from Chris Portier. Nothing on here that shows him as the author.

BY MR. GRIFFIS:

Q. Sir, first of all, do you recognize this as a document that you were sent?

A. I mean, I can't recall, but if -- you know, if this was under the subpoena...

Q. It's a document that you provided to us. I will tell you that.

A. If that's the case then, yes, then I -- then I would say, yeah, it was swept up. But I don't recall this specifically.

Q. Okay.

MS. WAGSTAFF: I object to any questions on this document as the deponent said he doesn't recall it.

BY MR. GRIFFIS:

Q. Do you recall Mr. Portier communicating with you about the responses that he was putting together in asking you to be part of it and sign responding to EFSA?

A. Yeah. We -- I was one of a approximately 93 people.

Q. Yes, sir. And it says, "Thoughts on EFSA response. See EFSA response."

Are these Chris Portier's thoughts or your thoughts?

MS. WAGSTAFF: Object to any questions on this document as the deponent has stated he doesn't remember this document.

A. These are not my comments.

BY MR. GRIFFIS:

Q. Okay. Comment on paragraph 19, "After carefully reading the current RAR, they may be correct" -- that's R-A-R -- "they may be correct in saying that IARC could have used these data. However, second guessing this at this time is wasted effort."

See that, sir?

MS. WAGSTAFF: Objection to asking questions on this document, as the deponent has said he does not recall it. He also stated these are not his comments.

BY MR. GRIFFIS:

Q. You see that, sir?

A. I see it. These are not my comments.

Q. No, sir. I'm not saying that they are. Chris Portier's comments.

Would you go to paragraph 19 in Exhibit 15 so that we can see what he's talking about?

MS. WAGSTAFF: Objection. No foundation. Chris Portier's comments.

A. Exhibit 15.

BY MR. GRIFFIS:

Q. Yes, sir. See these paragraphs are hand numbered, and they match up with the comments on the other. That's why I produced this one to you.

A. Okay. Paragraph 19?

Q. Right. And paragraph 19 reads, "I wish to make a final but important point regarding transparency. The background documents display detailed information on how EFSA and Member States appraised each study, including industry sponsored studies and how all those which participated, except Sweden, concluded that glyphosate is unlikely to pose a carcinogenic hazard to humans."

Did I read that correctly?

A. Yes.

Q. Okay. So my question to you now, sir, is, do you agree that IARC could have used those data that were reviewed by EFSA and not reviewed by IARC?

A. IARC -- the preamble -- sorry.

MS. WAGSTAFF: I was going to say an objection to using this document, as the deponent has said he does not recall this document, and this is calling for an expert -- calling for expert testimony and hypotheticals when he has stated all along that they followed the procedures as set forth in the preamble.

BY MR. GRIFFIS:

Q. So your answer?

A. The preamble asked us to look at the publicly available literature.

Q. Okay. Could IARC -- I don't mean -- was it a -- was it consistent with IARC's rules or would it have been against the rules or not -- as a scientist, doing a review of the science on the mechanism, could you have used the additional data found in the industry studies that were reviewed by EFSA and other regulators?

MS. WAGSTAFF: Objection. You're asking him whether or not he should have broke from IARC procedure, and I think that puts the deponent in a very uncomfortable position; and it's an inappropriate question.

BY MR. GRIFFIS:

Q. Let me be clear. I'm not asking you if it would have been good for you to go ahead and break with IARC procedures. I'm asking you, as a scientist, doing what's supposed to be an objective evaluation of the available evidence on glyphosate, would it have been useful to you to have even more evidence to look at, i.e., the evidence looked at by EFSA and not by IARC?

MS. WAGSTAFF: Object.

BY MR. GRIFFIS:

Q. Would that have improved or made worse your evaluation of mechanism?

MS. WAGSTAFF: Objection. Foundation. We don't even know what the data is you're talking about -- the strength, weaknesses the biases, anything with respect to that data.

MR. WHITE: When answering this, just answer to the best of your ability with -- from your own knowledge. All right? You don't need to speculate on whether or not you should or should not have been using data that was not provided to you.

A. I don't know the answer to your question. I don't know without -- I can't

speculate. I feel like I would be speculating.
BY MR. GRIFFIS:
Q. Because you don't know what that data shows?
A. The form of the data, where it's published, I would -- I think it's speculative for me to say.
Q. Based on your understanding of the methodology that you were to follow as part of working group 112, would more information that is negative weaken your conclusion of a strong association, or is that not the way the methodology works?
MS. WAGSTAFF: Objection. Calls for a hypothetical and speculation on what would have happened had some fictitious data been available pursuant to the preamble.
BY MR. GRIFFIS:
Q. Do you understand the question, sir?
A. I do.
Q. Okay. So now -- and what it is, is given the procedure that you're following, given the methodology that IARC asked you to follow, you had evidence of genotoxicity that you considered to be strong. You had evidence of oxidative

stress that you considered to be strong.

What does the methodology say you are to do with additional negative information about genotoxicity and additional negative information about oxidative stress? Would that weaken or have no effect on a conclusion of strong?

MS. WAGSTAFF: Objection. Calls for a hypothetical. Again, talking about data that is not allowed under the preamble.

MR. WHITE: I advise you to only answer to the extent that you know under the preamble. All right?

A. Preamble says we were to evaluate the publicly available literature, and that's what we did.

BY MR. GRIFFIS:

Q. Do you know, in working group 118 and working group 119, they looked at non-published literature?

MS. WAGSTAFF: Objection. This is completely outside the scope when we're talking about other monographs. We're here to talk about monograph 112 and specifically the mechanism subgroup. And now you're

bringing up monographs 117 and 120 that we know absolutely nothing about.

BY MR. GRIFFIS:

Q. 118 and 119. Did you know that, sir?

MR. WHITE: If we -- if this isn't going to be brought back to the monograph that's actually at issue, I'm going to instruct him not --

MR. GRIFFIS: It is, sir. It is.

BY MR. GRIFFIS:

Q. Do you know that IARC doesn't always follow what you're saying is the rule of only looking at published literature? Do you know that?

MS. WAGSTAFF: Completely beyond the scope of this deposition. I object for that.

MR. WHITE: You don't have to answer that.

BY MR. GRIFFIS:

Q. Sir, do you know why the leaders of IARC chose not to look at unpublished data in working group 112?

MR. WHITE: To the extent of your knowledge.

A. Because it wasn't in the publicly

available database.
BY MR. GRIFFIS:
Q. And do you know why they chose to look at unpublished literature in other monographs?
MS. WAGSTAFF: Objection. Foundation. And beyond the scope allowed by this deposition.
MR. WHITE: To the extent of your knowledge.
MS. WAGSTAFF: And calls for speculation. How is he supposed to know what other people did or didn't do?
A. I didn't know.
BY MR. GRIFFIS:
Q. Were you aware before today that IARC doesn't necessarily follow a rule of not looking at unpublished data?
MS. WAGSTAFF: Objection. Foundation. Timing and the scope of this deposition. And his attorney has already instructed him not to answer on that.
MR. WHITE: That's true. You don't have to answer that.
BY MR. GRIFFIS:
Q. Sir, you came to working group 112. You

followed the rules. The rules, as you understood them, didn't permit you to consider registration studies, didn't permit you to consider data generated by industry, and didn't permit to consider -- although you weren't part of the decision -- the Greim data or the Hyer & Kirkland data.

Is that all correct?

MS. WAGSTAFF: Objection to the phrasing of that whereas it was the rules as he considered it. Later monographs looked at unpublished data for one reason or another as you're apparently representing. We have no idea if the rules change. We have no idea under what circumstances that happened. And we have no idea of any facts surrounding that method. It's beyond the scope of the deposition.

MR. GRIFFIS: I object to the continued speaking deposition [sic] which are taking more transcript than my questions.

BY MR. GRIFFIS:

Q. Everything I just said is true, right?

A. We were instructed to evaluate the publicly available literature.

Q. Right. And you know that there was a body of registration studies, a body of industry studies. There were studies mentioned in the Greim article study. There were studies mentioned in Hyer & Kirkland. And you were not to consider any of those.

You did know that, right?

A. I didn't know the specifics of the industry studies.

Q. Okay. And you didn't look at those studies, I know, but you know that such studies existed and that you weren't going to be looking at them?

A. I didn't know the scope of the industry studies.

Q. Okay. Do you know today that there are such studies?

A. Based on the Greim article?

MS. WAGSTAFF: Scope.

BY MR. GRIFFIS:

Q. Based on the Greim article.

You were copied on that e-mail before you went to working group 112 attaching the Greim article, right?

A. Yes.

Q. Okay, sir. And is it fair to say that you don't know what your conclusions would have been with regard to mechanism had you seen those studies.

Is that fair?

A. I can't speculate on that because we didn't see it.

Q. Right. So you're agreeing with me.

You don't even know what -- you didn't know how that would have affected your analysis?

A. I can't speculate on that because we were instructed to look at the publicly available literature.

Q. Okay. Now, I am going to ask you a question about the methodology that you were asked to follow.

And this isn't about whether you look at publicly available literature or not. This isn't about that facet of the methodology prescribed to you by IARC. It's about a different facet.

My question is this, sir. Were you instructed, if you find multiple articles that show, in your view, a strong genotox signal and

multiple articles that show a strong oxidative stress signal, plus there are a whole bunch of other articles in those same categories that are negative, what are you to do with the negative articles? Do they tend to weaken your conclusion, as to strong association, or they have no impact on it because you already have a number of articles showing this association?

Do you understand my question?

A. So we look at the overall database, and we try to balance it with positive articles -- articles that suggest strong evidence versus negative evidence. So we are trying to look at the entire database as a whole and weigh that.

Q. So you were weighing the evidence. And if there was negative evidence that would tend to count against a conclusion -- a strong conclusion with regard to genotox or oxidative stress or any of the other ten cancer characteristics, right?

A. I believe the -- in the monograph that the tables lay out in a balanced way several of the positive studies and some of the negative studies, but on balance, there were more positives than negatives that helped us draw a conclusion.

Q. Right. And right now I'm not asking

about how those studies came out in your -- in your weighing. I'm asking you about what you understood to be the rules that you were following in doing the weighing. And I believe you're telling me your understanding was that, to the extent that there are negative studies in a particular category, those tend to count against a finding of strong.

And to the extent that there are positive studies, they tend to count for a finding of strong, and you -- you weigh them; is that correct?

A. Within the publicly available literature, we try to weigh both sets of data.

Q. Okay. And so you try to weigh both sets of data within the literature that you were provided as part of working group 112 and the publicly available literature that you found. And you -- and to the extent that there was negative data in that data set, it counted against your conclusion of strong.

That's fair?

A. We would weigh all the studies together, positive and negative.

Q. All right. Is your lab here at MSU a

GLP lab?

A. No.

Q. Are there any GLP labs at MSU?

MS. WAGSTAFF: Object to scope. Whether or not Mississippi State University has a GLP lab has nothing to do with the mechanisms of that group's conclusions about glyphosate, completely irrelevant.

MR. WHITE: You can answer to your knowledge?

A. I'm not aware. I don't know if there are or not.

BY MR. GRIFFIS:

Q. Okay. Do you know generally how GLP certification is achieved?

MS. WAGSTAFF: Objection. This is not relevant to the scope of this deposition.

MR. WHITE: Only to your knowledge.

A. My only knowledge is from work I did in a contract lab back in the early '90s that was GLP certified. So that is my knowledge of GLP.

BY MR. GRIFFIS:

Q. Okay.

A. When I worked in a contract lab.

Q. Okay. You worked in a GLP lab?

A. Yes.

Q. And your -- there were independent auditors in that lab, correct?

A. We would have auditors that came in either from the company or from government, in EPA, for example.

Q. The company auditors -- I don't know if you knew this or not -- but did you know that they were required to have a different management than the management of the lab so that they're reporting to different people?

MS. WAGSTAFF: Objection. This is getting way beyond monograph 112 and whether or not he knows about the management of GLP labs.

A. I don't know that level of detail about GLP.

BY MR. GRIFFIS:

Q. Okay, sir.

(Exhibit No. 13-16 marked for identification.)

BY MR. GRIFFIS:

Q. Sir, Exhibit 16 is an e-mail from you to Dr. Rusyn, March 11th of 2015, which is the day you left Lyon, right?

A. Yes.

Q. And you told him, "You did a fantastic job as chair," and asked to keep in touch, right?

A. Yes.

Q. Okay. And you were responding to a March 9th -- you weren't responding to the substance, but you clicked respond on a March 9th e-mail from Dr. Rusyn, correct?

A. Yes.

Q. Okay. And Dr. Rusyn wrote, "I would like to convene group 4 downstairs in the first coffee break to discuss the information below," correct?

A. Yes.

Q. Okay. And March 9th was the second to last day of working group 112, right?

A. Yes.

Q. Okay. This e-mail -- we don't have some of the header information. In Dr. Rusyn's e-mail, your system that you were using didn't include it.

But was this e-mail sent to you and the others in group 4?

A. I would -- it was sent to me. I would assume all the members received it.

Q. And did you, in fact, convene downstairs

in the first coffee break to discuss the information?

A. We did to discuss a potential upgrade.

Q. Okay. And what do you mean by upgrade?

A. The mechanistic upgrade. If animal data was considered limited and the human epi data was considered limited by the IARC rubric in the preamble, if there was mechanistic information that was considered strong by the subgroup, we could consider an upgrade.

Q. So you wanted to make sure we were all on the same page, we being group 4, correct?

A. Yes.

Q. Lower the evaluations from groups 2 and 3 in the IARC matrix. You apparently attached the matrix; although, that didn't come through in what you sent us, right?

A. Where's the matrix? I'm sorry. I don't see what.

Q. I'm reading from the e-mail. "Just to make sure we're on the same page, below are the evaluations from groups 2 and 3 and the IARC matrix."

A. Oh, okay.

Q. And there's some image that was attached

but didn't come through in what you provided to us, presumably the matrix.

"To get us to understand where our conclusions fit." That's what he wrote, right?

A. Yes.

Q. With regard to glyphosate, he said, "human limited." That's group 2, finding of limited. Group 3, finding of limited.

Correct?

A. At this -- well, at -- I don't know what was going on in group 2. I am not privy to their conversations, but it is -- it says "animal, limited" there. So he was convening a meeting --

Q. He says below --

A. -- to discuss --

Q. Yes, sir.

And he was -- this is at 9:00, so it's after both plenary sessions for the day, right?

MS. WAGSTAFF: Objection. Where do you see that it's at 9:00?

MR. GRIFFIS: I'm sorry. I'm wrong. It's at 4:42.

BY MR. GRIFFIS:

Q. It's at a break from the plenary

session, correct?

MS. WAGSTAFF: Well, object to that. We don't if it's a.m. or p.m.

A. I don't know what time it is.

BY MR. GRIFFIS:

Q. Were you taking a coffee break at 4:42 a.m. or 4:42 p.m., sir?

A. No. This was not a -- we were meeting -- the first coffee break, that would be in the morning.

Q. The first coffee -- so was this meeting to be held on the 9th or the 10th?

A. I don't recall.

Q. All right. Anyway, he was -- he said, "Below are the evaluations from groups 2 and 3." And the evaluation that he reported from group 2 was human glyphosate -- human, limited. And the evaluation that he reported for group 3 for glyphosate was animal, limited. Correct?

A. That's what's written here.

MS. WAGSTAFF: Object to the form.

BY MR. GRIFFIS:

Q. And what would -- you were in the plenary sessions, right, sir?

A. Yes.

Q. What was the basis for the finding of limited in the animal study group as of March 9th?

MS. WAGSTAFF: I'm going to object to the suggestion that these were announced at the plenary session. Nowhere on here that I can see does it say that Dr. Rusyn got this from the plenary session. We don't know where he got them from.

A. I don't recall what -- the discussion regarding the limited evidence.

BY MR. GRIFFIS:

Q. Do you know, sir, whether Dr. Rusyn got this from a public session that you were present at or from a closed session where only he and a few other people were present?

A. I don't know.

Q. Do you know where Dr. Rusyn got the impetus to ask for an upgrade?

MS. WAGSTAFF: Objection. Calls for speculation.

A. Part of the rubric or the preamble gives the mechanistic group the ability -- well, to propose an upgrade if the evidence warrants it.

BY MR. GRIFFIS:

Q. He says -- okay. And I want to finish

out my question.

Do you have any understanding as to the basis for the animal group's evaluation, as of March 9th, being limited?

MS. WAGSTAFF: Objection. Asked and answered.

A. I don't know. I don't know the basis of what was -- what they considered limited.

BY MR. GRIFFIS:

Q. Earlier you told -- you testified that, in your opinion, the most controversial issue with regarding to glyphosate was group 3's classification as between limited and sufficient with regard to particular animal tumor data; is that right?

A. This was the main issue. This was an important issue. There was a lot of debate about it.

Q. And when did you witness that debate or hear about that debate?

A. In the plenary session.

Q. There was debate at the plenary session between limited and sufficient in the animal study group; is that right?

A. There was -- in the early plenary

session, there was -- there was debate. There was further analysis going on, but I was not privy to all that data analysis because I am not a cancer biologist. So it was out of my -- my expertise.

Q. What was being said by the advocates for the limited view in those sessions that you witnessed advocating for a limited finding?

A. What was said?

Q. Yes, sir.

A. I don't recall.

Q. Who was making -- who was making the points in favor of a limited deal?

MS. WAGSTAFF: Objection. Asked and answered. He said he didn't know that.

A. I really don't recall who was arguing. At this stage, I was busy getting my drafts together, doing some fact-checking. I know there was lots of debate. It wasn't in my area of expertise, so the -- in the conversations that were going in the group 3 where I wasn't present for it.

Q. And in evaluating it as the most contentious issue with regard to glyphosate at working group 112, what were you basing that on? Hearing people argue and not understanding the

arguments or what?

A. No. There was a --

MS. WAGSTAFF: Objection.

Argumentative.

A. Yeah. There was a lot of debate. There was a lot of scientific debate about the evidence about -- and how it fit with the preamble.

BY MR. GRIFFIS:

Q. And as you're sitting here, you can't remember anything about that debate or who was advocating on which side?

MS. WAGSTAFF: Objection. Asked and answered.

A. I -- I don't recall. I -- I don't recall the limited -- who was advocating for limited. I don't recall who -- who was advocating for a limited stance.

BY MR. GRIFFIS:

Q. Was it only the members of the -- of group 3 who were having that debate, or was Chris Portier or Kurt Straif or Dr. Rusyn or anyone else also participating in it?

A. There was debate with the whole group in the plenary session. There was debate going on with several scientists.

Q. Any from group 4?
A. Yes.
Q. Who?
A. Dr. Rusyn. He was -- he was debating the evidence.
Q. He was advocating for a finding of sufficient, correct?
A. I don't -- that word "advocate," I -- you know, I don't recall if it was -- he didn't use the word "advocate."
Q. Yes, sir. You used the word "debate" earlier.
A. Yeah. Debate about the evidence. Or there's debate about how to deal with this animal cancer bioassay data. We had, you know, multiple species getting tumors, different types of tumors, so there was debate there.
Q. What analyses or reanalyses of the cancer data are you aware of from being a participant in working group 112?
MS. WAGSTAFF: Objection. He testified he did not participate in the animal subgroups.
A. I don't know what analyses or reanalyses were being conducted. I know on the -- on the --

they have -- they stated in the monograph what statistical analyses were being used. But I am not familiar with what was done.

BY MR. GRIFFIS:

Q. Okay. Was Chris Portier involved in the debate over whether the animal group conclusion should be limited or sufficient?

A. I don't recall him specifically. I don't can't recall.

Q. Was Kurt Straif involved in that debate?

MS. WAGSTAFF: You now asked him seven different times if he recalls who was involved in the debate on which side, and every time he said he doesn't recall. So I'm not quite sure we need to stay on this topic.

A. I don't recall if Kurt was involved in the discussion. He may have been trying to form -- you know, mediate, be a moderator, as his role as the head of the IARC monographs. But that's, I mean, certainly not advocating for one side or the other.

BY MR. GRIFFIS:

Q. Dr. Rusyn says, after he reports that the animal group, as of March 9th, was -- had a finding of limited. "I have questions on the

limited in animals because there are two studies showing significant effect."

You see that, sir?

A. Yes.

Q. Did Dr. Rusyn express during this coffee break meeting or any other time his position that limited was the wrong conclusion and sufficient was the correct conclusion for the animal studies group?

MS. WAGSTAFF: Objection as to scope. This deposition was noticed to explore the mechanism subgroup's conclusions about glyphosate, and you are directly asking him about some other person's opinion on the animal subgroup.

A. I think he was questioning these two studies showing a significant effect, and I don't recall which two studies they are. Again, I don't think he was strongly advocating limited or sufficient at that time.

BY MR. GRIFFIS:

Q. During this coffee break meeting or at any other meetings with Dr. Rusyn, did he express in front of you what his questions were on the classification as limited?

MS. WAGSTAFF: Same objection as to scope. This deposition was noticed to explore the mechanism subgroup's conclusion about glyphosate, and you're asking him questions about some other scientist's opinion on the animal subgroup.

A. I don't recall what his questions were about limited.

BY MR. GRIFFIS:

Q. Again, sir, the point of this meeting -- this coffee break meeting on the second to last day of working group 112 was to talk about an upgrade, which is an interaction between the mechanism group's conclusions and those of the animals study's group to alter the classification; is this right?

MS. WAGSTAFF: Object to the form.

A. It was meeting to -- as to whether the mechanistic subgroup should bring forward to the whole group in the plenary session whether a mechanistic upgrade should be voted on or asked for.

BY MR. GRIFFIS:

Q. Tell us what happened at this meeting.

A. Which particular meeting?

Q. The first coffee break meeting that Dr. Rusyn convened on the second to last day of working group 112?

A. So it dealt with the mechanistic evidence we had. We had given the qualitative descriptor of strong to both the genotoxicity data and the oxidative stress data. These were two of the ten characteristics of the human carcinogens. And the debate or the question that was being raised was whether we bring it forward to upgrade -- as an upgrade in the plenary session. Was it -- was the group comfortable with that approach.

Q. Was Dr. Rusyn's recommendation that the group bring it forward, and he was seeing if you were comfortable with that approach?

MS. WAGSTAFF: Objection. Scope.

A. It wasn't his recommendation. He took a straw poll of the group -- of the subgroup.

BY MR. GRIFFIS:

Q. Did he lay out the analysis before he took the straw poll?

A. The analysis was in the monograph in the drafts of the mechanistic section. So the rationale is in the monograph for labeling the

genotoxicity data as strong evidence and the oxidative stress data as indicating strong evidence. So the rationale was there. So we were familiar with that.

Q. Okay. And as to all three of the substances that he wanted to talk about -- malathion, diazinon, and glyphosate -- he was either supporting saying we support the classification in 2-A or suggesting considering upgrade to 2-A, correct?

A. This is for glyphosate?

MS. WAGSTAFF: Object.

BY MR. GRIFFIS:

Q. For malathion, diazinon, and glyphosate. Should I ask the question again, sir?

A. Let me just read this.

Q. Sure. Okay.

A. Okay, sir. Your question?

Q. Yes, sir. In this meeting that Dr. Rusyn convened on the last day -- second to last day of working group 112, with regard to all three of the substances that he addressed in his e-mail, you were either already at 2-A or he was suggesting considering an upgrade to 2-A; is that

right?

A. For malathion, we were at 2-A.

Q. And for the other two, he suggested considering an upgrade to 2-A, right?

A. He was -- yes. He was asking whether we should consider an upgrade to 2-A.

Q. And the group decided to upgrade to 2-A as to both of those, right?

A. Glyphosate, we didn't upgrade. Right. We did -- didn't -- there was no upgrade because the final conclusion for the human data with limited evidence -- and for the animal data, it was considered sufficient based on IARC's rubric, that constitutes a 2-A classification. So we did not need to propose an upgrade.

Q. Well, when you walked out of this meeting, what had you decided about proposing an upgrade?

A. That's while the meeting is going on. So we -- he had taken -- we had taken a straw poll, and we supported the proposal to upgrade if necessary. That never occurred, though. That never happened because it was 2-A based on the animal data and the human data.

Q. So the outcome of this coffee break

meeting on March 9th was the mechanism group agreeing to support an upgrade as to diazinon and to glyphosate, but it never became necessary for the mechanism group to put that into effect at a plenary session because the animal group moved; is that right?

A. For glyphosate.

Q. For glyphosate.

What happened with diazinon?

MS. WAGSTAFF: Objection. Scope. Irrelevant to this litigation.

A. I can't recall. We'll have to look at the monograph.

BY MR. GRIFFIS:

Q. Okay. Was Chris Portier at that meeting, coffee breaking?

A. I don't recall.

Q. Okay. And, sir, I have some questions for you about your understanding of the nature of the review that you were conducting as a member of working group 112. I'll show you a document on that first. Okay. If I can find it.

(Exhibit No. 13-17 marked for identification.)

MR. GRIFFIS: I only have two copies of

that.

BY MR. GRIFFIS:

Q. Okay. Sir, on March 30th of 2015, someone named Nathaniel Harmon, who I assume you didn't previously know, e-mailed you saying he worked for Guide Point, inviting you to talk to a client who was an institutional investor about glyphosate; is that right?

A. Yes.

Q. And you declined the invitation but told Mr. Harmon some things about the nature of the evaluation that you had performed as a member of working group 112; is that right?

A. Yes.

Q. First of all, you corrected him that it wasn't a study.

It was a review of scientific literature, right?

A. Yes.

Q. And you stress that IARC deals with hazard identification as opposed to a risk assessment; is that right?

A. Correct.

Q. And hazard identification, as you described to Mr. Harmon, is a classification

indicating the strength of the evidence that a substance can cause cancer, right?

A. Correct.

Q. And it's different than a risk assessment, which defines the level of carcinogenic risk for individuals; is that right?

A. Correct.

Q. And you referred him to the IARC preamble on that subject?

A. Yes.

Q. Okay. And you have the preamble there, sir. The preamble is Exhibit 10.

A. Okay.

Q. On Page 2, sir, the preamble in the third full paragraph under objective and scope --

A. I'm sorry. What page?

Q. Page 2.

A. Page 2.

Q. Under the heading of objective and scope.

A. I'm not finding it.

Q. The pages -- when I say Page 2, I mean the page numbered 2, not the second page.

A. Can you point it out to me?

Q. I'm sorry. The numbers start here.

A. Okay. Got you.

Q. There's no numbers on the first two pages. Page 2, objective and scope, third full paragraph. This is -- this is the methodology that you were following. "Cancer hazard is an agent that is capable of causing cancer under some circumstances; while a cancer risk is an estimate of the carcinogenic effects expected from exposure to a cancer hazard," correct?

A. Yes.

Q. Okay.

A. That's what the IARC preamble says.

Q. And it says -- it goes on to say in that same paragraph that, "The monograph identified cancer hazards even when risks are very low at current exposure levels, and that's because new uses or unforeseen exposures could engender risks that are significantly higher; is that right?

A. Yes.

Q. Okay. So under this hazard versus risk approach, it is possible for a substance to be a hazard without actually being a risk to causing human cancers.

Is that fair?

MS. WAGSTAFF: Objection. Calls for

expert opinion. And it's -- you've just asked him to admit that the IARC doesn't look at risk assessments, so now you're -- you shouldn't be asking about risk assessments as a fact witness on the IARC 112.

A. This -- so your question is hazard -- hazard versus risk?

BY MR. GRIFFIS:

Q. Yes, sir.

A. And we were dealing with a hazard assessment in IARC. Risk assessments was not our job.

Q. Right. And I just wanted to -- these questions are so that we can understand and the jury can understand what you understood yourself to be doing as a member of working group 112. That's why I'm asking you about this, sir.

You understood, as a member of working group 112, in identifying glyphosate as being a cancer hazard, that it could be that humans would not be exposed to glyphosate at a level that could be a threat to them, whether it's a hazard or not. True?

MS. WAGSTAFF: Objections. Calls for expert opinion. He's now said two times that

he didn't do risk assessments. So asking him whether or not humans are exposed at a level that's dangerous is a back door way of asking for an expert opinion, and it's inappropriate.

A. I'm not an expert in risk assessment. My role here was to study the toxicokinetic database.

BY MR. GRIFFIS:

Q. And you were a member of the whole working group on the entire issue of mechanism, right?

A. Correct.

Q. Okay. Based on your work and your conclusions and what the mechanism group did, the mechanism group's conclusions do not translate to a statement that glyphosate is capable of causing cancer in humans at levels at which humans are actually exposed.

Because you didn't look at the exposure issue, correct?

MS. WAGSTAFF: Objection. Calls for expert opinion. It's not a negative or a positive finding in that way, I believe that the doctor has said.

A. There is an exposure subgroup in the IARC panel that deals with exposures.

BY MR. GRIFFIS:

Q. No. The --

A. So there is evidence of exposure, human exposure.

Q. Yes. Whether humans are exposed.

A. Right.

Q. And there's some information as to the ways that they're exposed.

But my question is a little different, sir. As a member of working group 112 and a member of the mechanism subgroup, your conclusions about glyphosate being a hazard with regard to carcinogenicity does not translate into a statement that glyphosate is capable of causing cancer in any particular actual human at the levels to which they are exposed?

MS. WAGSTAFF: Objection. Calls for an expert opinion. That's not what he's tested, and he's has admitted he's not an expert on risk assessment. This line of questioning is inappropriate.

MR. WHITE: I believe he's answered more than one time that the analysis that they did

was for -- not for risks but for hazards.
I'm not sure that we need to keep asking the same question.
BY MR. GRIFFIS:
Q. Okay. So that the jury can understand what you understood yourself to be doing and the meaning of the procedure you were following in following the preamble, sir, it is true that we can't conclude that any particular human being ever got cancer from glyphosate from IARC's findings.
Is that true?
MS. WAGSTAFF: Objection. Calls for expert opinion. Misstates the testimony and the preamble.
MR. WHITE: Yeah. You only have to answer to the extent of your knowledge based on hazard versus risk. You do not have to offer any kind of opinion.
A. I think you're asking me to give an opinion.
BY MR. GRIFFIS:
Q. I'm asking you to help the jury understand what hazard means, that you were doing a hazard assessment and that you were aiming to

point out the difference between hazard and risk, which you told them is done by regulatory bodies -- risk assessment if done by regulatory bodies.

MS. WAGSTAFF: I object. You're asking him to take the hazard definition and the risk definition as put in the preamble and apply the risk definition to what they -- the IARC found about hazards. And I feel that that is an expert opinion, and I feel that his attorney is appropriate in instructing him not to answer.

BY MR. GRIFFIS:

Q. IARC did not find that any human ever got cancer from glyphosate, right?

MS. WAGSTAFF: Objection. Misstates the record.

A. IARC's conclusion is that glyphosate falls under two way designation. Probably carcinogenic to humans. And that's, I think, all I can say.

BY MR. GRIFFIS:

Q. Is it consistent or inconsistent with a finding of 2-A, given the scope of the review that you conducted and given that it was a hazard

assessment, that glyphosate has never caused cancer in any human being?

MS. WAGSTAFF: Objection. You're calling for an expert opinion again. He's just told you that all he can say is that glyphosate -- or that IARC found it a 2-A. And now you're asking him to apply and come up with an expert opinion, which is inappropriate.

A. I'm not an expert in risk assessment, so I can't really give you an answer on that.

BY MR. GRIFFIS:

Q. Okay. Sir, so is it fair to say that you can't say whether IARC's conclusion that glyphosate is classified as 2-A is consistent with glyphosate never having caused any actual human cancer?

MS. WAGSTAFF: Objection. You're doing a back door question to get him to give an expert opinion, and that's inappropriate.

BY MR. GRIFFIS:

Q. You can't say?

MS. WAGSTAFF: Same objection. Calling for expert opinion. I think it's inappropriate.

MR. WHITE: You can answer whether or not you have knowledge but not --

A. Glyphosate was deemed to be 2-A by the working group.

BY MR. GRIFFIS:

Q. Yes, sir. And as a member of the working group, I just wanted to know whether it's your understanding that glyphosate could be 2-A and that no human being ever got cancer from glyphosate. Because that's a risk issue, not a hazard issue.

Is that your understanding, or am I wrong about that?

MS. WAGSTAFF: Objection. Once again, you're calling for an expert opinion. He's told you what IARC did as a hazard report. He told you the conclusion. And you're asking him to apply a risk assessment.

A. I can't say for sure -- you don't know. You don't -- 100 percent certainty that glyphosate never caused cancer, you can't say that.

BY MR. GRIFFIS:

Q. You can't say one way or the other?

MS. WAGSTAFF: Objection. Calls for an expert opinion.

MR. WHITE: You don't have to answer that. We've been down this. You've asked the same question a number of times, and he's given his answer.

MR. GRIFFIS: Let's take five minutes.

VIDEOGRAPHER: Off record at 2:04.

(A short recess was taken.)

(Exhibit No. 13-18 marked for identification.)

VIDEOGRAPHER: Back on record at 2:11.

BY MR. GRIFFIS:

Q. Doctor, I handed you Exhibit 18, which is an Environmental Health Perspective, and I believe this is one you alluded to earlier in the deposition, correct?

A. Yes.

Q. This is the document setting forth what you've called a few times the 10 key characteristics of carcinogens; is that right?

A. Yes.

MS. WAGSTAFF: Objection. Misstates the testimony. He stated they were on the website. And I object to any documents that were after IARC being within the scope of this deposition.

BY MR. GRIFFIS:

Q. Okay. Sir, where did you -- how did you come to understand that the source of the 10 key characteristics of carcinogens which you were to apply as a member of working group 112 came from the Environmental Health Perspective document?

A. Well, Kate Guyton, the meeting rapitor, was an author on it. So she was aware of this article. This was received 5th of March. So she was aware, and she had given us a Powerpoint presentation on these key characteristics as a way to prepare for evaluating the data. There was a -- I believe it was on the IARC website, too.

Q. So Kathryn Guyton had you follow this procedure as part of your methodology. And it was submitted -- it was received by the journal actually during the working group's review; is that right?

A. Yes. It was received.

Q. And it's correct that it hadn't been accepted for publication until after working group 112 had already left; is that right?

A. Yes.

MS. WAGSTAFF: Object to the question. He stated that these 10 points were on the

IARC website unrelated to a publication that they were a policy of the IARC. So any suggestion that this was unpublished manuscript we would object to.

BY MR. GRIFFIS:

Q. Do you know, sir, if the procedure that you followed of putting carcinogens into ten different bins was a published peer-reviewed procedure before working group 112?

A. So this -- this paper -- the idea of characteristics of carcinogens actually derives from an earlier paper published in Cell about the 10 different cellular mechanisms that can happen during the carcinogenic process and cancer progression.

So it was -- there was a Cell paper published -- oh, a few years ago by some eminent cell cancer biologist who -- who brought up the issues that these key characteristics of carcinogens might fit into, like cell proliferation, receptor mediated effects genotoxicity, DNA repair.

These -- these known mechanisms by which a cell becomes a cancer cell, the various steps that have to take place.

Q. And did these Cell articles propose using those the ten characteristics as a screening tool for hazard?

A. No. No, not at all.

Q. Do you know --

A. This is -- yeah -- no.

Q. Okay. So this is the first publication that proposes using those ten characteristics as a screening tool for hazard?

A. This one right here, DHP article, the mechanistic data is vast, so this was a way to organize and consolidate and compile the data --

Q. Okay. So as a --

A. -- in a logical way.

Q. Yes, sir.

So as a methodology, this process that you went through, this methodology that you applied as a member of working group 112, didn't get published and peer reviewed until after you had already left Lyon.

Fair?

A. This article wasn't in -- yeah. In press until after the -- until after the meeting.

Q. Okay. I'd like to take a look at the authors, sir.

A. Uh-huh (affirmative response).
Q. And, first of all, have you heard of either the Ramazzini Institute or the Collegium Ramazzini?
A. No.
Q. Never been asked to be a Ramazzini fellow?
A. No.
Q. Okay. And do you know of any link between the Ramazzini Institute or the Collegium Ramazzini and IARC?
A. No.
Q. You ever heard of a Ramazzini fellow?
A. No.
Q. Okay. And I don't know well, sir. You're making a face and shaking your head.
A. Oh, I'm sorry. This Ramazzini.
Q. Does it ring a little bell, or you just have no idea what --
A. No. I'm sorry.
MS. WAGSTAFF: Are you seeing that word on here, or is that just a different question?
MR. GRIFFIS: It's not on here.
MS. WAGSTAFF: Okay.

BY MR. GRIFFIS:

Q. Do you know, sir, that multiple authors of this paper and multiple signatories of EFSA letter that you were asked to sign off on and the differences letter that Chris Portier asked you to sign off on were members of the Ramazzini Institute or the Collegium Ramazzini?

A. No.

Q. Okay. You don't know anything about the funding of the Ramazzini Institute or Collegium Ramazzini?

A. No.

Q. Okay. This -- in this paper under the acknowledgment section on Page 2, it says, "We thank all other members of the 2012 working group who attended the workshops in Lyon, France," and, of course, you weren't part of a working group in 2012; is that right?

A. Thank all members of the 2012 working group?

Q. Yes.

A. Did you say volume 12?

Q. 2012.

A. 2012 working group. Yeah. Yeah. I wasn't a member of that.

Q. All right. And on Page 4 in the Smith article, sir, under background, the second sentence, it says, "This exercise was complicated by the absence of a broadly accepted systematic method for evaluating mechanistic data to support conclusions regarding human hazard from exposure to carcinogens."

Did I read that right?

A. Yes.

Q. Okay. Is it correct that, as of the time the working group met, there was not a broadly accepted systematic method to evaluate mechanistic data to support conclusions about human hazard to exposure to carcinogens?

A. I think there were approaches to consolidate the data, but this was an attempt to logically place the evidence in these -- in these 10 key characteristics.

Q. And since this article was submitted for publication, have there been other attempts by others authors to do that?

A. I believe IARC uses this as their approach in all -- all mechanistic evaluations now.

Q. Yes, sir. I'm asking something

different. I'm asking about published literature on the subjective use of mechanism in hazard assessment.

Has anyone else proposed an alternative methodology to this one?

A. Not that I'm aware of.

Q. Okay. Is that an area of literature that you follow -- that you'd be likely to know or just don't happen to know?

A. It's not -- no. I just don't know.

Q. Okay. Now, on Page 6, I'm looking at the middle paragraph and starting about the middle of it.

"Herein, we describe" -- you see that?

A. Uh-huh (affirmative response).

Q. "Herein, we describe these 10 key characteristics and discuss their importance in carcinogenesis. These characteristics are properties that human carcinogens commonly show and can encompass many different types of mechanistic influence. They are not mechanisms in and of themselves, nor are they adverse outcome pathways."

Did I read that right?

A. Yes.

Q. Could you explain to the jury, please, what it means -- the statement that "they are not mechanisms in and of themselves" means and what the statement "they are not adverse outcome pathways" means?

MS. WAGSTAFF: I'm going to object to the use of this document as it was clearly developed and finalized after the monograph 112, and Dr. Ross was not an author of this document. And he has testified that he -- that they have a similar set of 10 characteristics, but not this document.

A. I don't really follow -- I mean, I'm not sure what is meant by this sentence, as I didn't write this sentence. I believe adverse outcome pathways relates to risk assessments.

MS. WAGSTAFF: Objection. Calls for speculation on what others meant.

BY MR. GRIFFIS:

Q. This material -- I mean, this is Kathryn Guyton's proposal for how hazard assessments should be done, and she presented on this to you, correct?

A. This is of this whole group here, but

Dr. Guyton did present to us the key characteristics -- the 10 key characteristics.

Q. And that's the procedure you followed?

A. And that is.

Q. Okay. You don't understand what was meant by, "These 10 key characteristics are not mechanisms in and of themselves"?

A. I'm not -- I'm clear on what this is meant -- "they are not mechanisms in and of themselves." I am not -- I can't read the mind of the author.

Q. Let's go to Page 10. Characteristic 2 is genotoxic, and this is one of the two of the ten characteristics where the working group 112 found a strong connection, correct?

A. Correct.

Q. The weight of the evidence that you evaluated was strong, right?

A. Correct.

Q. I am looking at the first full paragraph under genotoxic and the last sentence, "DNA damage by itself is not a mutation," correct?

MS. WAGSTAFF: Are you asking if that's what it says, or are you asking --

MR. GRIFFIS: So far I'm asking if

that's what it says.

A. Yes.

BY MR. GRIFFIS:

Q. Okay. And it is true, right? DNA damage is not a mutation?

MS. WAGSTAFF: Object to the form.

A. DNA damage is -- can lead to a mutation.

BY MR. GRIFFIS:

Q. And in order for DNA damage to lead to cancer, it needs to cause a mutation, and that mutation has to be one that affects the cell in a way that leads to unchecked proliferation of cells, correct?

MS. WAGSTAFF: Objection. This is calling for expert testimony and not the mechanism subgroup's about glyphosate.

A. So my direct responsibility was to do the toxicokinetic evaluation.

BY MR. GRIFFIS:

Q. Yes, sir. And let me ask you about that. There are -- in the IARC monograph, there are multiple sections, correct? And multiple sections that the working group -- that your group, group 4, was responsible for collectively, right?

A. Yes. So my section was specifically toxicokinetics. I wasn't writing on any of the 10 key characteristics in terms of draft form.

Q. Yes, sir.

A. I wasn't responsible for that.

Q. So if we went through in detail the IARC monograph and looked at -- I mean, for example, there's a section that addresses genotoxicity, right?

A. Uh-huh (affirmative response).

Q. And it has multiple studies -- multiple tables, and those tables list multiple studies, and there are summaries of what the study showed or didn't show.

All of that is in there?

A. Correct.

Q. Would you be an appropriate person to ask about the significance of those tables and the evaluation of those tables and what it said in those studies and the significance of those studies to a finding of genotoxicity or not?

A. I have a background in DNA adduct research as a graduate student and as a post doc. So I -- yes. There are aspects that I would be appropriate too -- it would be appropriate for me

to evaluate as a group -- as a mechanism subgroup.

Q. And let me be clear. I wasn't asking whether you'd be qualified to review those studies. I'm sure you would.

My question is whether, as you sit here today, based on the knowledge in your head and the work that you did in working group 112, you would be qualified to answer detailed questions about those studies, about the tables, about the significance of the studies to working group 112's evaluation of genotoxicity?

A. Well, it's -- it's -- it was a long time ago. Now, I am familiar with the evaluation, and it's in the monograph.

Q. Okay.

A. So I -- uh-huh (affirmative response).

Q. Okay. Well, I asked the questions about the layout of the monograph and your expertise because you said, look, I was in charge of pharmacokinetic sections. So would you explain to us the distinction between the pharmacokinetics section which you wrote in the first instance and -- I'll wait for your mic to go back.

Okay. Would you explain to us the distinction that you were trying to make between

the pharmacokinetic section, which you wrote in the first instance, and the other sections of group 4 in terms of what you know and can testify to and give opinions about?

A. Right. So I wrote the drafts on the toxicokinetics, the drafts that were started six months before the meeting. That was my main responsibility. I was at the meeting as this evidence is being presented, the genotoxicity evidence and the oxidative stress evidence.

And as a peer reviewer, as a scientist peer reviewer, we are asked to evaluate those studies and decide whether they are strong evidence, moderate, or weak evidence. So we are peer reviewing in that process the data that's being presented and the arguments that are being presented.

Q. For example, with regard to glyphosate and the multiple studies that were cited in tables 4.1, 4.2, 4.3. 4.4, 4.5 of the monograph and subject to genotoxicity, did you read all those studies?

A. I did not.

Q. Okay. Did you read many of those studies?

A. We had points -- you know, there were leads on each of those sections -- on genotoxicity, for example --

Q. Yes, sir.

A. -- who were responsible for evaluating those studies and writing summaries about what that data meant.

Q. Sure. And they presumably read them all, but you did not?

A. Yes. We did not have time.

Q. Okay. And you didn't have time because you weren't just looking at genotoxicity. You were looking other bins, and you were looking at four other chemicals?

A. There was a lot of data.

Q. Correct.

On the oxidative stress section, that's where you did a peer review before you came, and you testified that you spent about a day and a half of total work on the peer review, including writing up the comment, which took a day.

Did you read all of those studies?

A. Some of the studies where I wanted to understand the method that was used to measure

oxidative stress, I looked at those papers.

Q. So you pulled some of the papers to look up the methodology --

A. I was interested in that.

Q. -- in those papers, and, otherwise, you didn't read the oxidative stress studies unless cited?

A. I did not read every single study that was cited.

Q. Did you read many of the oxidative stress studies in entirety?

A. I can't put a number on it.

Q. Okay. As to the other characteristics, the other 10 characteristics -- and I won't list them all here -- did you read the studies cited by working group 112?

A. For the other -- for receptor mediated and so forth?

Q. Receptor mediated, et cetera?

A. Those studies -- those characteristics weren't considered strong, so less -- less weight was put on them.

Q. It's even less likely that you would have read them; is that right?

A. Yes.

MS. WAGSTAFF: Object to form.

BY MR. GRIFFIS:

Q. Okay. On Page 20, sir. Well, first of all, let's go to Page 18. And the Smith article has a header here on Page 18. "Using the key characteristics to systematically identify, organize, and summarize mechanisms of information." Then there's a step one and on subsequent pages, step two and step three. And this is the methodology that was presented to you by Kathryn Guyton that the working group followed?

MS. WAGSTAFF: Object to the form.

A. I don't know if she presented it in exact same detail as here.

BY MR. GRIFFIS:

Q. Do you want to take a minute to read three steps and see if this is the procedure that you followed?

A. So one issue is I wasn't binning the -- I wasn't tagging this information for glyphosate. I mean, the toxicokinetics --

Q. I'm sorry. When I say the procedure you followed, I meant working group 112, not you personally as to every aspect of it.

A. In general, yes. We used we used HAWC

to tag studies. I think, in general, yeah, this is -- it's fair. To help us compile the relevant information.

Q. Under step 3, the first sentence is says, "It is increasingly evident" -- under step 3, the first sentence, "It is increasingly evident that multiple biological alterations or sets of different perturbations are necessary to convert a normal cell to a transformed cell and ultimately a tumor."

Did I read that right?

A. Correct.

MS. WAGSTAFF: Can you tell me where you're reading from?

MR. GRIFFIS: Yes, sir. Step 3 on Page 20?

MS. WAGSTAFF: Oh, first sentence.

MR. GRIFFIS: Yes, ma'am. First sentence.

BY MR. GRIFFIS:

Q. So a -- an insult, like a genotoxic insult causes DNA damage. More things need to happen in a cascade of events before that will produce a tumor and produce a cancer.

Is that fair?

MS. WAGSTAFF: Objection. Calls for expert opinion. This has nothing to do with how monograph -- a subgroup of the mechanism came to a conclusion of glyphosate, whether or not he believes that.

A. So I'm not a cancer biologist.

BY MR. GRIFFIS:

Q. Yes, sir.

A. It is out of my expertise, but there are several steps that have to take place. And that's cited by Hanahan & Weinberg. That was the article I was referring to. Multiple -- there's -- there are multiple steps in cancer.

Q. That's the article from Cell that you were referring to earlier?

A. Yeah. Yeah.

Q. Thank you.

Well, as someone who had -- who is on the mechanism subgroup, did you understand yourself to be trying to identify mechanisms by which glyphosate could actually produce cancer in human beings?

A. So the 10 key characteristics are what's known -- human carcinogens, human cancers that are formed by carcinogens like tobacco smoke, they

have usually two or more of these key characteristics. They go through a mechanisms that includes at least two or more of those key characteristics to cause tumors.

And so we were trying to use those key characteristics to evaluate the glyphosate database. We were trying to compile the data within those key characteristics to see where the strength of the evidence lay.

Q. And did you consider it to be part of what you were doing to figure out if the mechanisms you were looking at could actually induce that chain of events that could lead hypothetically to human cancer?

MS. WAGSTAFF: Objection. Your question just says hypothetically. And now you're again asking about the risk assessment and back-dooring an expert opinion. And I do not think this is an appropriate scope to ask about risk.

A. So it -- of course, if we could identify mechanisms, that would be important in any evaluation in terms of how a compound causes cancer.

BY MR. GRIFFIS:

Q. Yes, sir. Did you understand it to be -- from the briefings that you got about the methodology that you were to follow, the methodology set forth in the preamble, et cetera, that it was part of what you were there to do -- you being all of working group 112, not necessarily you personally -- to figure out how these mechanisms could actually lead to cancer in human beings or if they did?

MS. WAGSTAFF: Same objection.

A. We were charged with determining whether there was evidence in the glyphosate database -- the publicly available database that it had aspects of these 10 key characteristics, was -- what was the strength of evidence for those 10 key characteristics.

BY MR. GRIFFIS:

Q. And did group 4 take the next step of linking up what you found with regard to the 10 key characteristics, the two that were strong with regard to glyphosate to any additional steps in the chain between DNA insult and on one end of the chain and cancer on the other end of the chain?

A. So what we identified in subgroup 4 in

terms of genotoxicity was that the mechanism was operable in human cells. Mechanism -- the key characteristic of genotoxicity, actual damage to the nucleic acids. So that was deemed to be operable in humans and human cells in vitro.

Q. Yes, sir.

And did you also reach any conclusions about whether the mechanism then led to the next step in carcinogenesis or whether it may have stopped there?

A. We had strong evidence for genotoxicity and for oxidative stress.

Q. Okay. Do you understand what I'm asking you, sir?

A. I think I do, but I -- I don't --

Q. Okay.

A. I'm just telling you what we have.

Q. Yes, sir. I do. I understand what you have.

So you agree with me that there are potential insults to DNA on one side that would include oxidative stress and the genotoxicity findings that were set forth in the monograph. And then in order for actual human cancers to be created, there would need to be a series of

additional events, like mutations, for example. Like mutations.

And my question is, did the mechanism group or any other group you know of as part of working group 112 find any of those additional steps occurring -- find that the mechanisms actually produced any of the additional steps -- caused mutations, caused mutations that lasted, caused mutations that weren't repaired, caused mutations that were relevant to produce cancer, led to cancer?

MS. WAGSTAFF: Objection. You're asking the same question that the attorney -- that Attorney White told him not to respond to earlier, and that is an expert opinion on the risk assessment. And when you said probably 15 times, have you ever found that it caused it in humans, and he -- and right before the end. And now you've just rephrased your question, and you're asking it again. I think that's inappropriate, and I object.

BY MR. GRIFFIS:

Q. And to be clear, sir, what I'm asking you is whether IARC or whether the mechanism group or anyone else at IARC that you know of followed

the chain of evidence that you see and found any further than identifying the initial insult to DNA.

MS. WAGSTAFF: Same objection.

A. So there are -- there is definite evidence of damage to DNA, chromosomal aberrations, micronuclei that indicate damage to the nucleic acids. And that's in the tables. Those are in the tables.

And that's -- that's as far as -- we -- we -- if it was there, if there was linkages further down the line, we would have tried to look for that. Obviously, those 10 key characteristics are all points along that progression from the initial insult to actual tumor. These 10 key characteristics involved those steps. So we are looking for those steps. We are trying to make the linkage.

BY MR. GRIFFIS:

Q. Okay. And you found two?

A. We found two key characteristics of -- and those are genotoxicity and oxidative stress.

Q. Do you know of studies have been done looking at whether the actual presence of some of 10 key characteristics matches up with actual

carcinogenicity in multiple substances?

MS. WAGSTAFF: Objection to scope.

A. So there's -- what I understand is in group -- there are some group chemicals that exhibit at least two of the 10 key characteristics.

BY MR. GRIFFIS:

Q. And do you know whether large statistical analyses have been done matching up positive findings and the 10 key characteristics with whether a substance is a known carcinogen and finding that there is or is not a relationship between those two things?

MS. WAGSTAFF: Object to the form.

A. I haven't done that analyses.

BY MR. GRIFFIS:

Q. Okay. Do you know of anyone --

A. Analysis. I don't -- I can't recall. I don't know that. I know it's -- yeah. There's some data out there, but I'm not aware of it, exactly what it is -- where it is.

Q. Okay. As to the other eight characteristics -- and I'll run through them quickly just so you can remember what they are. And here's my question. As to other eight, IARC

working group 112, subgroup 4, either found that it doesn't appear to be applicable at all or found that the evidence was weak, which is the lowest classification you could give it, correct?

And that's -- shall I run through them?

A. The ten key characteristics -- or the other eight? Sure.

Q. Other than genotox and oxidative stress, found --

A. The others --

Q. -- no evidence or weak --

A. Or moderate. Maybe there was moderate. I don't remember. One of the key characteristics may have been labeled moderate, but I can't -- I don't recall exactly.

Q. We can -- I can point you to where it is -- each one is in the monograph if you would like. They're all no evidence or weak.

Act as an electrophile, altered DNA repair causing dynamic instability. That's two so far. Induce genetic alterations, chronic inflammation, immunosuppressive, modulate receptor mediated effects, immortalization, alter cell proliferation, cell death, nutrient supply.

A. Okay.
Q. So weak or no evidence as to those?
A. I will have to look at the monograph. I -- I don't remember --
Q. All right.
A. -- specifically those because our focus was on oxidative stress and genotoxicity.
(Exhibit No. 13-19 marked for identification.)
BY MR. GRIFFIS:
Q. Exhibit 19 is the monograph, sir. And if you'll turn to Page 77.
A. Okay.
Q. Left-hand column, the tiniest paragraph in the column. "Glyphosate is not electrophilic."
A. Yes.
Q. Okay. Next one, "Altered DNA repairs/cause genomic instability"?
A. Okay. Where is this?
Q. On 73.
A. Page 73.
MS. WAGSTAFF: Where on Page 73?
Q. 4.2.5, other mechanisms. We can take out several of them here. "No data on immortalization or genetic alteration, altered DNA

repair, or instability after exposure to glyphosate were available to the working group."

A. Okay.

MS. WAGSTAFF: Object to the form. It says were available.

BY MR. GRIFFIS:

Q. Working group found no evidence on those; is that right?

A. There -- well, no data available to examine those.

Q. Page 78. Weak evidence is at the top of the first column. "Weak evidence that glyphosate or glyphosate based formulations induced receptor mediated effects."

A. Okay. Yes.

Q. Weak evidence, next -- start of the next paragraph, "Weak evidence that glyphosate may effect cell proliferation or death." Next paragraph, "Weak evidence that glyphosate may affect the immune system, both the human and cellular response."

Next paragraph, "With regard to the other key characteristics of being a carcinogen, the working group considered that the data were too few for an evaluation to be made.

A. Yes.

Q. So do you agree with me that, other than genotoxic and oxidative stress, as to the 10 key mechanisms, the working group either found no evidence or found the evidence to be weak?

MS. WAGSTAFF: Objection. Misstates the record. I think you read that there was no data available in a few of those.

A. There was no data available to evaluate some of these key characteristics, or if there was, it was deemed to be weak evidence.

BY MR. GRIFFIS:

Q. Okay. You didn't have --

A. On the other key -- on those other eight. Either the data wasn't there or if there was data, it was deemed not to operate through that mechanism.

Q. And you did what you considered to be a comprehensive search to find any data that existed, right?

A. It was a -- yeah. Yes. Absolutely.

(Exhibit No. 13-20 marked for identification.)

BY MR. GRIFFIS:

Q. Okay. Exhibit 20.

MS. WAGSTAFF: Uh-huh (affirmative response).

BY MR. GRIFFIS:

Q. Sir, this is another document that you provided to us or that you provided to your lawyer and they provided to us perhaps. 112 mono 4 -- that's working group 112, monograph 4, mechanistic evidence summary.

And the first section is toxicokinetics; is that right?

A. Correct.

Q. Is the toxicokinetics section here something that you prepared?

A. I would have had prepared this, yes, as a summary of the -- of the section.

Q. Okay. So this is a document that you created summarizing the toxicokinetic information that you were finding?

A. Yes. This would have been the high points to highlight.

Q. All right. And you created this when?

A. This would have been created -- we created these summaries at the meeting.

Q. Okay. Key characteristics electrophilicity, glyphosate is not electrophilic.

We just found that in the monograph itself, right?

A. Correct.

Q. Okay. And genotoxicity -- and you wrote in, "In vivo evidence on genotoxicity of glyphosate largely" --

A. Can I clarify one point?

Q. Yes, sir.

A. I summarized the toxicokinetics. These key characteristics were -- I didn't -- I didn't make this part of the summary. I just -- whoever and I -- I just provided the toxicokinetic bullets.

Q. Okay. Who made the key characteristics section?

A. I don't recall. I don't recall. It may -- one of the -- one of the five of us who was on that subgroup.

Q. All right. It was sort of created at the -- at the working group 112 while you were in Lyon by someone in your group but not you?

A. Correct.

Q. Genotoxicity. It says, "In vivo evidence on genotoxicity of glyphosate is largely inconsistent in studies in rodents, and no

conclusions can be drawn from human studies due to mixed exposures to pesticides and other chemicals," correct?

A. That's what it says.

Q. Okay. "In vitro data in human and animal cells contain some evidence of genotoxicity of glyphosate and AMPA; however, a number of studies failed to observe evidence of genotoxicity."

I read that right?

A. Yes.

Q. "Positive studies for glyphosate, AMPA, and commercial formulations for glyphosate are available in a variety of plants, fish, and other marine organisms."

I read that right, correct?

A. Uh-huh (affirmative response). Yes.

Q. And then, "The majority of standard AIMS test bacterial strains were not affected by glyphosate or AMPA even in presence of metabolic activation," right?

A. Correct.

Q. Would you explain to the jury how an AIMS test works and what the role of metabolic activation is in an AIMS test?

A. So an AIMS test is a mutagenicity assay in which bacteria -- salmonella bacteria are exposed to the chemical of interest and whether there are DNA damage -- DNA damage that results in mutations resulting. The addition of the metabolic activation system is often used to bioactivate the chemical in question to a DNA reactive molecule.

Q. So this is a test that looks a step or two down the chain that we've been talking about from DNA damage on one end to actual mutations, and it finds whether there are mutations, both in the presence of the chemical being metabolized and not metabolized, right?

A. Yes. It's a mutagenicity assay using a prokaryotic organism, not a mammalian cell. A bacterial cell.

Q. And it's universally used by regulatory agencies as a critical cancer screening tool; is that right?

A. It is widely used.

Q. Okay. Do you know of anyone who doesn't use it?

MS. WAGSTAFF: Objection.

A. I don't know.

BY MR. GRIFFIS:

Q. Okay. All right. Now, during your discussions with group 4 -- subgroup 4, tell me what you discussed about the in vivo evidence on genotoxicity of glyphosate being inconsistent in studies in rodents.

What was inconsistent about the in vivo evidence on genotoxicity?

A. I don't -- this could -- this is an earlier draft. I don't recall what was considered inconsistent about it. There are tables with information on the in vivo evidence of genotoxicity in some rodent species. So I don't recall what was considered inconsistent about the studies.

Q. And do you consider that the group's opinion as to whether the studies were inconsistent changed over time?

A. There -- there was more evaluation occurring during the meeting.

Q. Did the --

A. There was more evaluation of the -- of the data.

Q. Did the group's opinion that the in vivo evidence on genotoxicity was largely inconsistent

in studies in rodents change?

A. It became stronger.

MS. WAGSTAFF: Object to summation.

BY MR. GRIFFIS:

Q. And what caused it to become stronger specifically?

A. So I don't know specific information about -- about this, but I know we were in the meeting. We're evaluating the data at the meeting. We're debating the data. It's not locked. It's not carved in stone when we get to Lyon. There's a debate that goes on, a peer review that goes on throughout the week. So things change. Things are in flux. This is -- there's scientific debate.

Q. Okay.

A. I -- so that -- it's whatever is in the final monograph is the final evaluation.

Q. And is it fair to say -- you know, and I understand that we're here to question you as a fact witness and what you remember, not necessarily what the other members of the group remember, sir.

But is it fair to say that what you remember is that the group's conclusion at some

point was that in vivo evidence on genotoxicity of glyphosate was largely inconsistent in studies in rodents. Over time, the opinion strengthened in favor of more consistency, and you don't remember specifically why?

MS. WAGSTAFF: I'm going to throw an objection in there as to foundation. That was the group's opinion. Dr. Ross testified he didn't write this and is not sure who wrote this. This could be the opinion of one scientist and not the entire subgroup.

A. So what you've got here, what you were able to get was before the peer review of the group. So we were charged with writing summaries, and further analyses would have taken place, debate. I do -- I do think I can say that the strength of the evidence of genotoxicity in nonhuman mammalian systems strengthened over the week.

BY MR. GRIFFIS:

Q. Well, the person who was in charge of drafting the genotox section was Frank LeCurieux as we've established, right?

A. I'm -- yes. I'm pretty certain about that.

Q. So was this Dr. LeCurieux's initial view, or was it the view of the group after some discussion at some point during the process?

A. I don't know who wrote this key characteristics section at this -- you know, I don't know who wrote it. Whether it was Dr. LeCurieux, I'm not sure.

Q. There was nobody who was tasked with writing all of these sections, correct?

A. The summaries?

Q. Yes, sir.

A. I was tasked with summarizing the toxicokinetics for each compound for each of these summaries.

Q. My point is that there was nobody who was tasked with writing a electrophilicity and genotoxicity and altered repair genomic instability and chronic inflammation or oxidative stress and receptor mediated and proliferation or death and immunosuppression and epigenetic effect and immortalization. This would have to be --

A. I don't know if it was done as a group or one individual person did each of these key characteristics. I -- again, because of my focus on toxicokinetics, I don't know the answer.

Q. In the initial drafting assignments, there was no one person who was in charge of all of that?

A. So --

Q. So this isn't somebody's first draft?

A. Well, this is someone's first draft of the summary.

Q. Of the summary after the group came together and talked, right?

MS. WAGSTAFF: Objection. Foundation.

A. This -- well, these were -- these were being drafted at the meeting.

BY MR. GRIFFIS:

Q. Could this be a summary of all of the first drafts?

A. It's possible. I don't really know. I don't know at what stage this was being -- at which stage this is at.

Q. Okay. What was said, to your recollection, about the position that no conclusions can be drawn from human studies due to mixed exposure pesticides and other chemicals with regard to genotoxicity?

MS. WAGSTAFF: Objection to you're asking questions, as Dr. Ross said he didn't

draft the key characteristics section of this document.

A. I can't speak to what was meant -- what was -- what this author was writing here because it became clear that there were some important studies in exposed humans that suggested or indicated a genotoxic effect.

BY MR. GRIFFIS:

Q. You're talking about the exposed people in Ecuador?

A. Columbia.

Q. Columbia. I got the border correct. Those are the studies you mean, though?

A. That's in table 4.1.

Q. 4.1. Those are the studies you mean, not other ones?

A. I'm referring to Bolognesi.

Q. Okay. Now, but this was something that was discussed in the group? This genotoxicity stuff was discussed as the group's --

A. Yes.

Q. -- opinions evolved over time, right?

A. Yes.

Q. Okay. And so what I'm asking you is

what you recall the group discussing with regard to the position that no conclusions can be drawn from human studies due to mixed exposures to pesticides and other chemicals.

A. This is where --

MS. WAGSTAFF: Same objection.

A. -- I was so focused on the toxicokinetics that I don't know the specific details about that.

MR. GRIFFIS: Okay. Let's take five or ten minutes.

VIDEOGRAPHER: Off record at 3:00.

(A short recess was taken.)

VIDEOGRAPHER: Back on the record at 3:08.

BY MR. GRIFFIS:

Q. Okay. Sir, before the break, we were talking about Exhibit 20 which says in the section entitled genotoxicity no conclusions can be drawn from human studies due to mixed exposures to pesticides and other chemicals.

And you talked about how the evidence -- how the views of the group changed over time based on human exposures, and you specifically cited the Bolognesi study to me,

correct?

MS. WAGSTAFF: I'm going to object on using that key characteristic because he said he didn't know who wrote it, and he didn't even know it was a group opinion.

A. Well, I can say that the -- the -- an important study was the Bolognesi study because it dealt with exposure to glyphosate both before -- it indicated that there was evidence of genotoxicity being exposed to humans.

BY MR. GRIFFIS:

Q. In the monograph, sir, which I take it is 19, all right. Exhibit 19, monograph, Page 77. In looking at the right-hand column at the top, sir. The evidence for genotoxicity caused by glyphosate formulations is strong. And it says there was three studies of genotoxicity -- end points and community residents exposed to glyphosate based formulations, two of which reported positive associations, right?

A. Uh-huh (affirmative response).

Q. And those are the Bolognesi study -- the Bolognesi study and Tu Pas y Nino (phonetic) study; is that right?

A. Is that in table 4.1? Yeah.

Q. Yeah.
A. Pas y nino, yes.
Q. And it says that two of the three studies reported positive associations.
Do you recall discussing at subgroup 4 that the second pas y nino study -- 2011 study followed up on the first and found no lasting alterations?
A. It would have been discussed.
Q. Do you recall that discussion?
MS. WAGSTAFF: Objection. Foundation.
A. Sorry?
BY MR. GRIFFIS:
Q. Do you recall that discussion?
A. I don't.
Q. Okay. You don't recall that there was a first pas y nino study finding formation of some micronuclei that was associated with exposure to Roundup, and the second study looking for lasting damage found none?
MS. WAGSTAFF: Objection to foundation.
BY MR. GRIFFIS:
Q. Do you recall that?
A. I don't recall.
Q. Okay. We'll look at them then.

The one that you cited to me was the Bolognesi study, correct?

A. Yes.

Q. Okay.

(Exhibit No. 13-21 marked for identification.)

MS. WAGSTAFF: I would object to going through specifically articles in the fact that this was the subgroup's conclusion about glyphosate, and Dr. Ross is just one portion of that. He's sitting here in the context of a deposition. Asking him to go through scientific data I don't think was what was contemplated by the order.

BY MR. GRIFFIS:

Q. I'm sorry. Here you go, sir.

And when you cited to me before the break the Bolognesi study specifically as evidence of glyphosate causing genotoxicity damage in human beings, what was your -- what was the point of citing that work to me?

A. Because it showed in exposed humans -- humans that were exposed to glyphosate based formulations, that the level of genotoxicity immediately following the exposure was greater

than baseline levels that were taken prior to the spray of the glyphosate based formulation.

So there was evidence in an exposed population of genotoxicity caused by the -- by the agent.

Q. And what was the significance of that to subgroup 4?

A. So -- because it's evidence in vivo that glyphosate may cause damage -- genetic damage to cells within an exposed population.

Q. And what was the importance of the Bolognesi study to subgroup 4 in its conclusion that there was strong evidence of genotoxicity?

MS. WAGSTAFF: Object to form.

A. Because looking at exposed populations to an agent and seeing evidence of DNA damage is strong evidence that it is occurring, that it can occur.

BY MR. GRIFFIS:

Q. So the Bolognesi was one of the strong pieces of evidence that you were relying on for your conclusions?

A. Not the only piece.

Q. Yes, sir. One of the strong pieces?

A. One of the -- one of -- one of the

strong pieces of evidence.

Q. Was it the strongest?

A. I can't -- I'm not -- I can't say that. It -- there was a lot of weight on it because it's in an exposed population.

Q. Okay. Please --

A. In vivo -- in vivo, too.

Q. Please explain what -- okay. You said there's a lot of weight on it because, A, it's in an exposed population and, B, in vivo.

Would you explain to the jury the significance of those two points, please?

A. Because the mechanism may operate in humans. The mechanism of genotoxicity may be occurring in exposed populations.

Q. Okay. And why is that important to a finding of genotoxicity?

A. Because it's becomes the real world. It's a human population exposed to the agent, and these people had evidence of genotoxicity. So they're -- it's a real world situation.

Q. Did you read the Bolognesi study while you were at working group 112?

A. I have looked at it, yes.

Q. Okay. And did you do it before subgroup

4 came to its conclusions?

A. No, I did not.

Q. Okay. This was after you left Lyon?

A. Yes.

Q. Let's take a look at it.

All right. First of all, though, sir, do you know who in subgroup 4 did read and analyze this, other than obviously Dr. LeCurieux who drafted the genotoxicity section?

A. I believe that our subgroup chair read it.

Q. You believe Dr. Rusyn did, too?

A. Yes.

Q. Anyone else?

A. Not that I'm ware of.

MS. WAGSTAFF: Object to speculation. And I also object to questioning on this article. And I request that, if you're going to be asking him questions on this, that Dr. Ross take the time and read this article completely and refresh himself with it before questions are asked.

BY MR. GRIFFIS:

Q. I'm going to direct you to some --

MS. WAGSTAFF: And if you need to read

the --

BY MR. GRIFFIS:

Q. Yes, sir. I was about to say that. If you need to read any other part of article other than where I direct you to answer a question, please feel free to do so. I'm going to start on Page 994, sir.

MS. WAGSTAFF: Dr. Ross, do you need to read the entire article?

THE WITNESS: I'm familiar with it. I -- if he -- if there's a specific question that I'll need time to analyze, then I'll let you know.

BY MR. GRIFFIS:

Q. Okay. This is part of the discussion section. The discussion section starts on 992, but I'm over on 994. The right-hand column, the third paragraph.

And it's talking about something called BNMN. For the court reporter --

A. BNMN. It stands for binucleated cells with micronuclei.

Q. And that's what they are measuring in this study, right?

A. Yes. One of the end points.

Q. So the frequency of BNMN increased after spraying with glyphosate, but not consistently, correct?

A. Point to where you're -- which paragraph now?

Q. The first sentence of the third paragraph. Right-hand column.

A. Oh, right-hand column?

Q. Yes, sir. Sorry.

A. Okay. I see where you're at.

Q. The results of -- and it goes on to say, "The results obtained with a second sampling carried out immediately after the glyphosate spraying showed a statistically significant increase in frequency of BNMN in the three regions where glyphosate was sprayed. However, this was not consistent with the rates of application used in the regions," correct?

A. Yes. And this was pointed out in the monograph.

Q. And then the first sentence of the next paragraph says, "There was no significant association between self-reported direct contact with eradication sprays and frequency of BNMN," correct?

A. Yes. That's what it says.

Q. Okay. At the bottom of that same paragraph, "Decreases in frequency of BNMN and the recovery period after glyphosate spraying were not consistent."

And it gives an example, correct?

A. And these points were brought up in the monograph.

Q. The next sentence -- the first sentence of the next paragraph says, "Overall, these results suggest that genotoxic damage associated with glyphosate spraying as evidenced by the MN test is small and appears to be transient," correct?

A. This is a conclusion of these authors.

Q. And the authors concluded that -- the authors observed that the changes that they saw were transient, correct?

A. One of the communities still had -- one of the communities had lower levels four months after the spray compared to the four to five days' spray. So there was evidence of genotoxicity right after the spray, and four to five months later, that genotoxicity had -- was not apparent.

Q. Now, when genotoxicity is repaired by

the body, it's not leading to cancer, right?

A. What this paper suggested was there is evidence that genotoxicity, in three or four communities that were exposed to the glyphosate based formulation -- that there was a statistical increase in micronuclei immediately after the spray.

And what was strong about the study, in our opinion, was there were baseline samples taken immediately before the spray, and those same individuals were assayed four days after the spray, and there was a statistical increase in the micronuclei.

That was an important basis for putting a strength -- a strength descriptor on that -- on this particular study.

Q. In doing so, you were disagreeing with the conclusions of the authors themselves, correct?

MS. WAGSTAFF: Object to the form. Argumentative.

A. We were -- in this -- you know, the analysis that was being done by the major participants who had reviewed this data was that there was a statistical increase in the level of

DNA damage.

BY MR. GRIFFIS:

Q. The authors --

A. This was considered to be strength -- a strength to the study.

Q. What the authors said -- the authors of the study said -- I'm on Page 995, the second column, and the second sentence of the first full paragraph.

"Based on the applicable Bradford Hill guidelines, it is not possible to assign causality to the increases in frequency of BNMN observed in our study," correct?

MS. WAGSTAFF: Can you tell me where you are?

MR. GRIFFIS: Page 995, right-hand column, first full paragraph, second sentence.

MS. WAGSTAFF: Okay. Got it.

BY MR. GRIFFIS:

Q. That's what they said, right?

A. Yes. That's what's here.

Q. "There's a smaller frequency of BNMN and MOMN in the region of no pesticide use compared with the regions where pesticides, including

glyphosate, were used, which is consistent with other reports in the literature. Although, temporality was satisfied in the increase in frequency of BNMN after spraying, this response did not show strength as it was not consistently correlated with the rate of application.

"Recovery was also inconsistent with decreases in frequency of BNMN in the areas or eradication spray, but not in the area where lower rates were applied on sugar cane," correct?

MS. WAGSTAFF: Are you asking if that's what it says?

BY MR. GRIFFIS:

Q. Yeah. That's what it says?

A. Yes.

Q. Correct?

And then second sentence in the last paragraph of the article, "The smaller number of subjects recruited in this study and small amount of information about the exposure precluded any conclusions," right?

A. So, yes, that's what it says. However, the subgroup found that there was a statistically significant increase in micronuclei immediately following the spray application in these

individuals.

Statistically significant meaning there's a higher number -- statistically significant increase in the level of genetic damage immediately following the spray. This was -- this was considered important.

Q. And all other causes of this in people who were living near the Columbia/Ecuador border being sprayed from planes with glyphosate formulations, many of which being sprayed due to coca eradication -- were those all ruled by the study?

MS. WAGSTAFF: Objection.

Argumentative.

A. I don't -- I don't know. Again, my area of expertise on this sub -- subgroup was to do toxicokinetics analysis. I am just telling you the subgroup was presented with this information that there was greater levels of genetic damage; that it was due to the glyphosate formulation being sprayed; and it was increased immediately following the spray compared to baseline values in the same individuals.

So there was evidence there that -- of genotoxicity that -- that was considered

strong.
BY MR. GRIFFIS:
Q. The two people in the group that actually read this -- that you know actually read this before the conclusions came out are Dr. Rusyn and the person who wrote the section, Frank LeCurieux. Correct?
MS. WAGSTAFF: Objection. I don't think he knows what everyone in the subgroup read.
A. Yeah. I don't know -- I don't know what else -- you know, I don't know about the other authors or the other participants. Whether they read it or not, I don't know.
BY MR. GRIFFIS:
Q. Okay. But --
A. But I know -- I do know that Mr. LeCurieux and Ivan would have read this.
Q. And did they say -- did you disclose in the IARC monograph that the authors of the paper didn't find there was any association?
MS. WAGSTAFF: Objection. The monograph speaks for itself.
A. Monographs -- it -- there's limitations that were described in the monograph.

BY MR. GRIFFIS:

Q. Did the disagreement with the conclusions of the authors of the article -- was that disclosed in the monograph?

MS. WAGSTAFF: Objection. The monograph speaks for itself. Argumentative.

A. I don't know. I don't -- I don't know if it is or not.

BY MR. GRIFFIS:

Q. Okay. Do you know Dr. Solomon, one of the coauthors of the Bolognesi paper?

A. I don't know him.

Q. Okay. Do you know that he said in a letter to editor -- I'm sorry -- in an interview that IARC got his study completely wrong?

A. I don't know that.

Q. Okay. Did anyone tell you that he was quoted as saying, "They got this totally wrong. They said the study showed there was relationship. It's certainly a different conclusion than the one we came to"?

MS. WAGSTAFF: Objection. Dr. Ross just stated he didn't know.

A. About -- about his comments? I don't know about those comments.

BY MR. GRIFFIS:

Q. Have you followed the discussions in the scientific community about IARC's methodology and IARC's conclusions followed you leaving working group 112?

A. I am aware of press, yes, regarding --

Q. Not this specific one, but some other press?

A. I don't recall this -- seeing this.

Q. And what have you followed?

A. I have seen reports in the Morning Consult and New York Times.

Q. Anything else?

A. I have seen some stuff in Huffington Post and Genetic Literacy Project and Monsanto's website.

MS. WAGSTAFF: I'm going to object about questions regarding what he's seen in the press regarding the 112, when the entire alleged purpose of this deposition was the working group mechanism's decision-making process, and what has happened since then in the media is completely irrelevant. And I believe that Judge Charbrio would agree.

BY MR. GRIFFIS:

Q. Have you been following those things yourself, or are these things that people e-mail you and you read when they happen to do that or what?

MS. WAGSTAFF: Same objection.

A. I've been familiar with it.

BY MR. GRIFFIS:

Q. Okay. Have any of the people -- and I'm talking about scientists who are commenting.

Have any of scientists who have commented in a critical way about IARC made any points that you considered to be useful or valuable critiques of the review that you did?

MS. WAGSTAFF: Objection. Once again, completely irrelevant and outside the scope of what the deposition allowed and requested.

A. I believe what we did was appropriate on -- based on the guidelines we were given in the preamble and -- yes. So I think what we did was appropriate. I can't comment beyond that.

BY MR. GRIFFIS:

Q. Okay. So you feel that you appropriately followed the guidelines that you were given?

A. Yes.

Q. Have you seen any criticisms of the guidelines that you were given you considered to be valid or fair?

A. No. I haven't -- no. I haven't seen criticisms of the guidelines we were given in the preamble that I felt were -- well, let me rephrase that. I haven't really seen criticisms of the guidelines.

Q. Okay. Fair enough.

Now oxidative stress. You said that you did a peer review of that section. It took about a day and a half of total time, including sending in the comments; is that right?

A. Yes.

Q. Okay. Now, without the oxidative stress findings, what would the mechanism group's recommendation have been?

MS. WAGSTAFF: Objection. That calls for speculation, and it's a hypothetical when the subgroup actually did find oxidative stress in its totality of the evidence type recommendation. And I don't think that anything -- any response would be anything more than speculation.

A. I'm not sure I understand the question.
BY MR. GRIFFIS:
Q. Yes, sir. I'm trying to understand how critical the oxidative stress findings were as compared to the genotoxicity findings in your conclusions that there was strong evidence that mechanisms existed by which glyphosate could cause cancer supporting, at one point, an upgrade which you didn't end up needing to advocate, et cetera.
How critical were the oxidative stress findings as compared to the genotox findings?
MS. WAGSTAFF: Again, I'll object to the fact that you're asking him to speculate on a hypothetical that never happened.
A. In terms of the 10 key characteristics, they were equally important.
BY MR. GRIFFIS:
Q. There's no hierarchy in the 10 key characteristics?
A. I'm not familiar with one.
Q. Okay. Are they considered all to be equal markers of carcinogenicity?
A. I don't think I am the one who can answer that.

Q. Is anyone in the mechanism group one who can answer that?

A. I think they are all given equal weight, in general. There's a -- yeah. I can't say there's one given more weight than the other.

Q. Okay. When you said, "I'm not the one to answer that," did you have someone in mind who --

A. No.

Q. -- would be better able to answer that?

A. I think a cancer biologist might be more appropriate to answer that specific question. We -- I looked at these 10 key characteristics as all being equal. We are trying to find the body of evidence that falls into each one of these key characteristics. What is the totality of the peer reviewed, published, openly available literature. So I don't think there's any bias in terms of one over another.

Q. Okay, sir. Tell me if this is right, then, that a cancer biologist may be better able to comment on the relevance of any particular one of the 10 key characteristics to formation of cancer.

Your mission was different. It was

to put the evidence into the bins and assess whether there was medium, moderate, or strong evidence with regard to each of the bins, correct?

MS. WAGSTAFF: Objection to form.

A. My job was to evaluate the toxicokinetic data on glyphosate.

BY MR. GRIFFIS:

Q. And group 4's job --

A. Group 4's job was to work on toxicokinetics, which I was primarily responsible for, and to evaluate the data -- the database on these 10 key characteristics.

Q. So group 4's mission was to put the evidence into the bins, into the ten categories, and assess within each bin whether it was weak, moderate, or strong evidence or we have no data in some cases, correct?

MS. WAGSTAFF: Object to the form. Use of the word "mission."

BY MR. GRIFFIS:

Q. Is that correct, sir?

A. Yes. Their -- yes.

Q. Okay.

(Exhibit No. 13-21 and Exhibit No. 13-22 marked for identification.)

MS. WAGSTAFF: Did you mark the Bolognesi as 21, or do you want to?

MR. GRIFFIS: I think so, yeah.

MS. WAGSTAFF: Okay. This will be 22.

MR. GRIFFIS: Yes.

MS. WAGSTAFF: I'm going to object to using the exhibit considering we can't read 95 percent of it.

BY MR. GRIFFIS:

Q. Exhibit 22, sir, is an e-mail from Ivan Rusyn that you produced as part of your production to Lauren Zeise, Frank LeCurieux to you, and -- I can't read the last one.

MS. WAGSTAFF: Was it produced by --

BY MR. GRIFFIS:

Q. What I want to ask you about is the big thing, not the little one. I mean, the rest of this that's very hard to read is primarily a list of assignments -- or recapitulation of the assignment list.

What I want to ask about is this large legible chart that Dr. Rusyn sent to members of the subgroup 4.

MS. WAGSTAFF: Object to foundation of this document.

BY MR. GRIFFIS:

Q. With regard to mechanistic, do you see the three squares at the top -- three rectangles, cancer in humans, cancer in experimental animals, and mechanistic and other relevant data?

A. Yes.

Q. Okay. And with regard to mechanistic and other relevant data, which, of course, was the portion that your group was focused on, there are dotted lines blowing up some questions. "Identify, establish some likely mechanistic events." And then there's some questions relevant to that.

And, "Determine whether each mechanism could operate in humans," and there's a question for that.

Do you see that?

A. Uh-huh (affirmative response).

Q. Now, do you recall the purpose for which Dr. Rusyn sent this to you and the other members of group 4?

MS. WAGSTAFF: Object to using this document when you can't see the date. You can't see who sent it. You can't see who it was sent from.

And did Hollingsworth, LLP, blow this up, or was it produced --

MR. GRIFFIS: It was produced exactly like this. The smallness was exactly like this.

MS. WAGSTAFF: Okay.

MR. GRIFFIS: Dated February 10th, 2015. Sent to Zeise, LeCurieux, Ross, and my eyes fail me for the third.

MS. WAGSTAFF: I'll maintain my objection since we can't read this, but go ahead.

BY MR. GRIFFIS:

Q. Try to ask the question again?

A. Yeah. So...

Q. Yes, sir. There's three rectangles at the top -- cancer in humans, cancer in experimental animals, and mechanistic or other relevant data. You just said that that was -- of course, that was the area that group 4 was focused on.

And then there are these dotted lines that blow up some subpoints and questions relevant to mechanistic and other relevant data, right?

A. Correct.

Q. Okay. The question I asked was, do you recall the purpose for which Dr. Rusyn sent you and other members of the group this chart with questions?

A. This is before the meeting. We -- we were having a teleconference, I presume. And this was -- this is -- this looks like verbiage that comes from the preamble and how to address the mechanistic data.

Q. Okay. So you understood this to be some of the questions that you would be focused on originating in the preamble in doing your mechanistic analysis.

Is that fair?

A. That's what the preamble -- yes. It comes from the preamble.

Q. Okay. On the issue of -- I'm looking at the first -- first item. "Identify, establish likely mechanistic events" -- and the second question -- the second set of questions asked, "Has each mechanism been challenged experimentally? Does supression of key mechanistic processes lead to supression of tumor development," correct?

A. Yes.

Q. Okay. And do you know of any data looked at by working group -- working group 112 at all showing that supression of genotoxicity or supression of oxidative stress, the mechanistic processes that you identified, led to supression of tumor development?

A. By which -- by glyphosate or glyphosate formulations?

Q. Yes, sir.

A. So to my knowledge, there are no evidence that suppressing those two would lead to supression of tumor development. I am not aware of any studies that looked at that. We -- yeah. There are supression of oxidative stress by the use of antioxidants when we looked at glyphosate.

Q. But those just looked at oxidative stress end points and not tumor development, right?

A. That's right.

(Exhibit No. 13-23 marked for identification.)

BY MR. GRIFFIS:

Q. Okay. Exhibit 23, sir. This is an e-mail chain involving Frank LeCurieux, yourself,

Kate Guyton, Matt Martin, and Lauren Zeise and Ivan Rusyn, correct?

A. Yes.

Q. Okay. Later adding in Andy Shapiro. I would like to focus first on Kathryn Guyton's March 13th, 2015 e-mail. Header of which is at the bottom of the first page, and the text appears on the second page.

Okay. Tell me when you're ready, sir.

A. Trying to get a timeline of the day here. Okay.

Q. Okay. So, again, I'd like to start out with Kathryn Guyton's March 13th, 2015 e-mail. The header is at the bottom of the first page, and the text is on the second page.

A. Okay.

Q. And she calls subgroup 4 the dream team and says those are Kurt's words -- Kurt Straif, correct?

A. Kurt Straif, yes.

Q. Kurt Straif called subgroup 4 the dream team?

A. That's what's written in this e-mail.

Q. Is that the first time you saw that?

A. I've seen this e-mail before.
Q. That's not quite what I meant.
Is this the first time you heard group 4 be called the dream team when you saw this e-mail?
A. Yes.
Q. Okay. She thanks you for your contributions during the plenary session and then says, "We were all impressed that Matt Martin was able to quickly calculate P values for the CA trend cut to aid interpretation of bioassay data."
I read that correctly?
A. Yes.
Q. Okay. And CA means Cochran Armitage?
A. Yes. I believe so.
Q. Okay. What --
A. I'm not a biostatistician, but I believe that's right.
Q. All right. Now, what group was Matt Martin in?
A. He was in subgroup 4.
Q. And what was the bioassay data? What is that a reference to?
A. Could be one of the five compounds. I -- I can't say with certainty which one it was.

Q. Well, it's talking about an animal study, correct?

A. Well, it's talking about some animal --

Q. Animal carcinogenic study?

A. Yeah. Animal cancer bioassay. But the specific compound...

MS. WAGSTAFF: Object to foundation of this questioning. He's unsure if it's even relating to glyphosate.

A. I don't -- I don't know if it relates specifically to glyphosate or not in this context.

BY MR. GRIFFIS:

Q. Okay. First of all, let me ask you this. Were you aware of Dr. Martin performing calculations on animal group studies?

A. I was vaguely aware. There was some -- he does statistics. He was doing some work at the meeting. I don't know the specifics of the analyses or which compounds or which particular animal bioassays were being examined.

I don't know the specifics because my focus was so much on the toxicokinetics during this stage of the meeting, that I don't know which -- which bioassay he is referring to.

Q. Were you aware that, during working

group 112, a Cochran analysis bioassay was recalculated with regard to glyphosate?

MS. WAGSTAFF: Objection. Foundation.

A. I -- I can't remember specifically if it was for glyphosate. There were several compounds. It's possible. It's possible.

BY MR. GRIFFIS:

Q. This is a slightly different question than do you remember what Dr. Martin did. This is specifically asking about glyphosate.

Do you recall that a Cochran analysis bioassay calculation was performed with regard to glyphosate during working group 112?

MS. WAGSTAFF: Objection. Foundation.

A. I can't -- with certainty, I can't remember which one was being analyzed.

BY MR. GRIFFIS:

Q. Do you recall that that Cochran analysis -- I'm sorry -- the Cochran Armitage analysis done on a glyphosate bioassay resulted in purported statistical significance where it had not existed before?

MS. WAGSTAFF: Objection. Foundation.

A. I don't know the specifics of that.

BY MR. GRIFFIS:

Q. Is that something you recall from the plenary sessions or from the other discussions that you participated in or heard?

A. I wasn't in subgroup 3, so I -- I don't know the specifics. I wasn't in their conversations about the statistical tests.

Q. Other than Matt Martin and Christopher Portier, who do you know who was performing statistical analyses during working group 112?

MS. WAGSTAFF: Objection.

A. I don't even know if Chris Portier was. I don't know.

BY MR. GRIFFIS:

Q. Do you not know that Chris Portier was?

A. I don't know.

Q. Okay. And you told us he was there as the bio statistician. Correct?

MS. WAGSTAFF: Object to the form.

A. Yes.

BY MR. GRIFFIS:

Q. Did he spend time with groups other than working group four? I'm sorry. Subgroup four?

A. I don't know if he spent time with them.

Q. Was he present at all subgroup four

meetings?

A. Oh. I think there was one point he had to step out. I don't remember which point.

Q. Okay.

A. There was a -- I can't -- he wasn't 100 percent there.

Q. Okay. One session he stepped out?

A. Yes.

Q. Okay. Other than that --

A. I recall that.

Q. Other than that, he was in all of your meetings?

A. Other than that, yes.

Q. Okay. This document mentions IARC table builder. Okay. Correct?

A. This e-mail?

Q. Yes.

A. Uh-huh (affirmative response).

Q. Okay. And do you know what the IARC table builder is?

A. Yes. I didn't use it, but it -- it was there to present data in the tables that you see in the monograph.

Q. Okay.

A. But I didn't use it.

Q. Was it connected to IOPS or HAWC or any other particular system?

A. I believe it is in IOPS. Maybe in HAWC. I don't think so. It was -- I think it was IOPSs.

Q. So in the IARC, the way it works, you enter bioassay incidents data and it automatically runs peer wise end trend analyses and presents that data?

A. I don't know anything about that.

Q. Okay.

A. I don't know how it -- how that works.

Q. Do you know or would we have to ask someone else, whether both peer wise and trend, trend Cochran Armitage test are appropriate for all bioassay incident data?

A. It is not my expertise area. I believe both were used.

Q. Do you know whether they are used under different circumstances, different sorts of data, different rarities of end point et cetera or do you not know?

A. I don't -- I don't know the details of that. I'm not with the peer wising and trend, I don't know when is the most appropriate to use. I know in cancer bioassay data it is often used.

Both types of tests.

Q. Okay. You don't know when to pick one and when to pick the other --

A. That would be out of my area.

Q. That's fine. And to the first e-mail in this document, the one from Katherine Guyton. Frank LeCurieux is cc'ing you March 13th of 2015. She is responding to a suggestion, Mr. LeCurieux, to involve subgroup one and more analyses. That's not the thing I want to focus on. She says a great suggestion.

And she says, "Unfortunately, I among other toxicologist don't understand the epidemiologist and their exposure compadres. However, I agree that their input, whatever it meant on the Bolognesi study, which was critical and in the end as valuable as, quote, sheep dip, with a monkey face?"

Would you explain what is meant by the input of the epidemiologist on the Bolognesi study?

MS. WAGSTAFF: Objection. This calls for speculation. Dr. Ross did not draft this e-mail. Dr. Guyton drafted this e-mail and asking him to opine on what she meant is pure

speculation.

BY MR. GRIFFIS:

Q. I'm not asking you to opine on what she meant, Doctor. I'm asking you what input the epidemiologist had on the Bolognesi study during the deliberation of the working group 112? Or is this something that happened that you don't know anything about?

MS. WAGSTAFF: Also, objection to the fact that there were multiple Bolognesi studies.

A. I don't recall what -- what is being discussed regarding the epidemiologists. I could only speculate.

BY MR. GRIFFIS:

Q. Whatever --

A. What they were talking about. Confounders and so forth. So I -- it is not -- I don't recall specifically this.

Q. There are two Bolognesi studies. One is the one we've discussed previously in this deposition about people being sprayed at the Columbia Ecuador border, and the other is an animal study. Right?

A. I don't know about the other. The only

one I'm -- I'm really familiar with is that in -- the one we looked at earlier.

Q. Do you know about epidemiologist or exposure people being involved in giving critical input with regard to either of the Bolognesi studies?

A. They may have. I don't know the answer. How much input, I don't know.

Q. Okay. You don't know anything about that event or where it took place?

A. I don't remember any conversation about that. I can't recall it.

Q. Okay. Take a break.

VIDEOGRAPHER: Off the record at 3:56.

(A short recess was taken.)

VIDEOGRAPHER: Back on the record, 4:05.

BY MR. GRIFFIS:

Q. Okay. We made a little bit of a nest of documents I handed you. I'd like to talk to you briefly about Exhibit 3, which is the subpoena that we sent early in this process, asking you to produce some documents.

A. This is the one in September?

Q. Yeah. Sometime in that -- not in connection with this deposition. The one which

you responded ultimately by sending us some documents. Would you tell us what you did. Don't tell me what your lawyers did, but tell us what you did to respond to that.

A. So I did searches of my work computer. Key word searches, I think, were IARC, glyphosate Monsanto.

I don't know the specifics. It was in the subpoena itself. But whatever was in the subpoena, I would do key word searches to make sure I could pull up all of the word docs, which several early drafts that we had -- I had -- I had drafted. That was the word docs on my work computer. I -- as you know, I had a spiral notebook that I kept notes with, and I looked for the notes from the meeting. And I made photocopies of it. Scanned it to the lawyers. Provided all of the word docs and provided it to the lawyers. And, yeah, I think so -- that's what I did. I scrubbed my computer for the -- you know, for what I needed to provide.

Q. Okay. I'm going to ask a series of questions to, you know, explore that a little bit and see if I can exhaust the process.

Do you work -- did you work on --

do you have multiple computers? Have a computer at home? A laptop --

A. Yeah.

Q. -- use?

A. I have my own laptop. And I also provided any -- a lot of it was redundant. I -- but if there was any documents on my laptop, I also provided that as well.

Q. Okay. Let's first get the complete list of computers that you used.

A. So it was my work computer and a personal laptop.

Q. Do you have a computer at home?

A. No. No. Not my personal computer.

Q. Do you have a personal computer at home?

A. I'm sorry. My laptop --

Q. Okay.

A. -- might take -- that I use at home.

Q. Okay. The laptop serves as your home computer?

A. Yes. Yes.

Q. And you don't use any other computer or tablets or ...

A. No.

Q. -- anything? Devices of any sort?

A. No.

Q. And you searched both your work computer and the laptop for the terms. Correct?

A. Right.

Q. Okay. In what program did you run those searches?

A. This is the search engine, this -- first of all, I knew where most of the documents were located, but to make sure I didn't have something in a folder I wasn't aware of, I used the search functionality on my laptop and on my work computer. Whatever that's -- that operating system is. I don't remember but -- what that is.

Q. It was the operating systems search --

A. Yeah.

Q. -- function, not Microsoft Word search function, is it?

A. Not Microsoft Word. The actual thing that will allow you to find any document that has, say, for example, IARC in the text.

Q. Right. Now, on the subject of PDFs, PDF don't always --

A. Yes.

Q. -- aren't always searchable.

A. I looked for PDFs as well.

Q. How did you look for PDFs that might not be searchable -- scan them or something?

A. I went through all and -- don't even know if we had any PDFs. I'm not sure. I can't remember for sure. But I looked for everything that was there in my PDF folder. I think there is ways in IARC I can -- you can use asterisks and dot PDF like asterisks IARC, asterisk dot PDF to do searches that would capture that.

Q. Yeah.

A. Capture those file.

Q. Some PDFs are intelligible enough to the computer that you can run word searches and some are not.

A. I --

Q. Okay. Did you -- what did you do about e-mail?

A. E-mail. So I looked but I think our IT guys were the ones capturing all of the e-mails that you have that -- that were -- that were responsive to the subpoena. So the IT guys were responsible for getting those.

Q. Other than any e-mail addresses that you might use exclusively for personal business, how many e-mail addresses do you have?

A. Oh. I have two e-mail addresses. One a personal and one a work.

Q. And do you send and receive work e-mails on the personal one for convenience ever?

A. No. The Yahoo one, I don't. I don't. I don't use it for work.

Q. And the work one, you ran some searches and found e-mails yourself. Did you provide those to your lawyers?

A. I'm trying to recall. I was told that IT will capture all of the e-mails. I don't recall actually handing over any e-mail hard copy of print outs.

Q. Okay.

A. Because I assumed IT would be more effective than I would be.

Q. And by IT, you mean IT here at MSU. Correct?

A. Yes.

Q. Okay. All right. Do you know what -- did you give them the list of search terms? Or was it handled by someone else?

A. I think this is a -- it's pretty common that they would have the search terms under the subpoena that they would be looking for. And they

would go through that, but I'm not the IT guy so...

Q. Don't know?

A. Yeah.

Q. Okay. You talked about your notebook. And what you did for that. You took it and you found -- I take it you found relevant date range.

A. Uh-huh (affirmative response).

Q. And copied the pages within that range and sent them off to your lawyers. Correct?

A. Right.

Q. Do you recall any pages from that date range that I haven't shown you today?

A. I don't recall. I don't -- I don't recall. I think I captured -- captured the date range of the meeting. Yeah. So I don't think there was any other -- you may have something I can't remember photocopying, but I don't remember it.

Q. I don't have anything in mine.

A. Okay. I thought you had another surprise.

Q. No, sir. No more surprises, if there were any.

And paper files, paper documents,

do you have any other than the notebook pertaining in any way to IARC, glyphosate or Monsanto?

A. No.

Q. Okay. And do you have any -- way that you operate -- primarily electronically, do y'all print things out?

A. Primarily.

Q. Or do you print them and then throw away?

A. Well, there would have been some early drafts that I would have tossed in the recycle. Might have had a hard copy of it and I was reviewing it myself. I didn't discover -- I didn't find any hard copies to hand over.

(Exhibit No. 13-24 marked for identification.)

BY MR. GRIFFIS:

Q. Almost done here, sir. Exhibit 24. Okay. Exhibit 25.

(Exhibit No. 13-25 marked for identification.)

MS. WAGSTAFF: Objection. Beyond the scope of this document. It really has no bearing on the subgroups conclusion about glyphosate.

BY MR. GRIFFIS:

Q. Sir, exhibit 24 is an e-mail from Katherine Guyton to you and to other persons talking about the subpoenas that were issued by Monsanto seeking documents, the documents we've just been talking about. Correct, sir?

A. Yes.

Q. Okay. And when you received this, it was sent on April 1st of 2016, you saw that Ms. Guyton was telling you the position of IARC all draft documents and materials prepared by the working group in advance or during the in-person monograph group meeting are to be considered draft and deliberative. And she went on to say that IARC does not encourage participants to retain working drafts of documents after the related monograph has been published. Correct?

A. Yes.

VIDEOGRAPHER: Off the record.

(A short recess was taken.)

VIDEOGRAPHER: Back on the record.

BY MR. GRIFFIS:

Q. Okay. Mr. White has said while we were off the record, that he believes that the e-mail was sent -- Exhibit 24 was sent in response to an

open record request and not specifically that document production request.

But, when you received this, did he do anything about it?

A. Which e-mail?

Q. Exhibit 24. Yeah.

A. Let's see. Well, Mississippi State lawyers were involved at this point. So I was talking with the Mississippi State lawyers about what -- what I needed to do.

Q. Okay. Don't tell me what you said to them or what they said to you.

But I assume you sent this on to them?

A. Yes. Yes, I did.

Q. Did you delete any drafts or any other documents?

A. No.

Q. Exhibit 25 is a letter dated April 7th, six days later from another IARC officer to working group members talking about request for disclosure of documents that some members of the working group to include yourself, sir, had received.

And at the end it says, "For all of

the above reasons IARC request you and your institute not to release any documents in your or your institute possession relating to your work in the capacity as a member of the working group."

Other than sending this on to your lawyers, did you do anything in response to this letter?

A. I provided this to the lawyers here at Mississippi State. That was -- that was my step.

Q. Now, at one point you were concerned about -- you were asked to participate in working group 117. Correct?

A. Correct.

Q. At one point you were concerned about doing so given the pendency of these document requests and your perception that handing over the documents would possibly put you at odds with IARC interests. Is that fair to say?

MS. WAGSTAFF: Objection to scope. This deposition is to explore the mechanism, group, subgroups, conclusion about glyphosate. And whether or not he had any reservation about participating in monograph 117, which was years after 112 opinion is completely irrelevant and outside of scope.

BY MR. GRIFFIS:

Q. Go ahead.

A. So my concern was that I would be in a conflict of interest between IARC and Mississippi State, and therefore I felt that I should resign from volume 117.

Q. And Kate Guyton at IARC reassured you and said we don't view there being any conflict? Correct?

A. I had discussions with lawyers here at Mississippi State. Kate had discussions with lawyers at IARC that there was no conflict of interest to serve on volume 117.

Q. And you -- sorry. Go ahead.

A. Go ahead.

Q. Didn't mean to cut you off, sir.

And you were asked to serve as the chair of mechanism 117. Is this right?

A. I served as the subgroup chair for mechanisms, yes.

Q. Okay.

A. For volume 117.

Q. Okay. Do you recall writing to Kate Guyton, "I expect Ivan, our fearless leader, to be there. Dr. Rusyn is a tough act to follow."

A. Those -- yes, that is my e-mail.
Q. And what did you mean by that?
A. I have a lot of respect for Dr. Rusyn as a scientist.
Q. What did you observe at working group 112. I assume that's what you were referring to when you said, "Tough act to follow." Correct?
A. Yes. I --
Q. What did you observe Dr. Rusyn doing at working group 112 that made you say that?
A. Extreme rigor. Very rigorous person -- scientist.
Q. What do you mean by rigor?
A. Evaluating the data objectively, demanding evidence.
Q. Sir, I'm finished with my questions for the time being. I'm going to reserve the rest of my time to follow up with -- there's going to be some questions from Ms. Wagstaff. I hope you understand that I had a job to do and Monsanto had a job to do in sending you those requests and conducting this deposition. I hope you haven't felt oppressed or harassed by me or my due process any more than is absolutely necessary.
A. Everyone's got a job to do. I

understand.

Q. Thank, you sir.

VIDEOGRAPHER: Break. Off the record.

(A short recess was taken.)

VIDEOGRAPHER: Back on record at 4:52.

EXAMINATION BY MS. WAGSTAFF:

Q. Good afternoon, Dr. Ross. My name is Aimee Wagstaff, and I am an attorney who is representing several plaintiffs who allege they have been injured after a result to exposure to glyphosate. Are you aware of that?

A. Yes.

Q. Okay. And so your deposition was first noticed by Monsanto in the multi-district litigation out of San Francisco and then we cross-noticed that deposition. Are you aware of that?

A. I knew it was in San Francisco, and I think it's been consolidated. What I understand the case has been consolidated. Is that --

Q. I mean, that's -- I'm just meaning are you aware that we cross-noticed your deposition?

A. Yes.

Q. Okay. And you and I have never met before today. Correct?

A. Correct.

Q. We've never spoken on the phone together before today. Correct?

A. Correct.

Q. We've never e-mailed before today. Correct?

A. Correct.

Q. And, in fact, the first time I met you was when you walked into this deposition room this morning. Correct?

A. Yes.

Q. Okay. And Mr. Griffis showed you an e-mail that my partner, my law partner Katherine Forgie sent you, I believe, a couple of years ago. Do you remember that this morning?

A. I don't remember what exhibit it was but, yes. I remember the e-mail.

Q. Okay. And just to be clear, you've never spoken with Ms. Forgie other than that unilateral attempt to contact you. Correct?

A. Yeah. I've never spoken -- spoken with Katherine Forgie.

Q. Okay. And we searched our law firm e-mails for a response from you and didn't find any. And that would be consistent with your

recollections to. Correct?

A. Yes.

Q. Okay. So and you haven't spoken with anyone from the Miller Law Firm out of Virginia. Correct?

A. No.

Q. Okay. And you haven't spoken anyone from Weitz Luxenberg out of New York City. Correct?

A. No.

Q. Okay. Excellent. So let's take a look at your CV really quick, which has been marked as Exhibit 4. And I'd just like to go over this real quickly, if I could.

It looks like it was updated in May of '17.

A. Yes.

Q. Okay. So this is -- this was provided by your attorney a couple of days ago, so it's the most updated CV that you have. Correct?

A. Right.

Q. Okay. And it looks like you've got a Ph.D. from UC Irvine?

A. Correct.

Q. Correct. And a bachelor of science and

chemistry from Cal Berkley?

A. Correct.

Q. Is that correct? And then it looks like you've got -- that was in 1998 and 1989 respectively. Correct?

A. Yes.

Q. And so if you backtrack your four years of college, my math may be off a little, but you started studying chemistry somewhere around 1985?

A. Yes.

Q. Okay. And to -- to today, which is in -- today is May 3rd, 2017, so you've been studying chemistry for about 32 years? Something like that?

A. Yes. Date me, yes.

Q. Not to date you. Okay. And it looks like you have -- starting with 1987, was your first sort of teaching assistant job at Cal Berkley as -- in the chemistry stock room teaching assistant. Is that correct?

A. Right. I worked as both. In the chemistry stock room and as a teaching assistant while an undergraduate.

Q. Okay. Great. So your first teaching job, if you will, in chemistry, was 30 years ago?

A. Yeah.

Q. Okay. And that works all the way up to today where you are, it looks like, currently an associate professor at Mississippi State University. Correct?

A. Yes.

Q. Okay. And you were working the department of basic sciences and you were awarded tenure, looks like, in July of 2010. Is that right?

A. Correct.

Q. Okay. If you go to the next page. It looks like you've received a lot of awards. You've listed one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen awards or honors that you've received in the field of advanced education and or chemistry. Is that correct?

A. Correct.

Q. Okay. The first one again being back in 1986 and the most recent one was an award that you received in China in 2015?

A. Correct.

Q. Okay. And all of this is true and accurate and up to date. Right?

A. Yes.

Q. Okay. And then if you scroll down and it says, "Research FTE 70 percent," what does that mean?

A. FTE is a way we break out our research teaching and service at the University. FTE stands for full time equivalent.

Q. Okay. And so can I -- can I take that to mean that 70 percent of your time your are researching?

A. That's right.

Q. Okay. And then you've talked about your -- you list peer review publications and you split that up into publications since joining Mississippi State University and prior to joining Mississippi State University. Right?

A. Correct.

Q. And it looks like you've written three peer review publications since you joined the University. Right? Look at the bottom where your left hand is.

A. More than three since I've joined the University.

Q. Okay.

A. I had several since I joined the

University. Several peer review public. It starts Page 7.

Q. Okay. So I was just confused because these three aren't numbered and then you start at 64, so I didn't know. So you --

A. Those are -- so first one in preparation. So this is something we are about to submit. And the other two are currently under review. So they haven't been formally accepted.

Q. Okay. So it's fair to say, though, that you've written in 64 peer review articles?

A. Yes.

Q. Since you joined the University. Is that correct?

A. Yes. 64 minus 12. Yes. So...

Q. A lot?

A. Right.

Q. Regardless. Okay. And what's the significance of having a publication peer reviewed?

A. Oh. Peer review is important in terms of having independent scientist evaluate the data that you are trying to publish and determining whether the conclusions you draw are based on the data that's provided within the publication.

Q. Okay. And to be published -- well strike that.

So is it fair to say peer review is sort of a safety net to ensure that the integrity of the -- and the high quality of the literature?

A. Yes. A peer review is very important because you have anonymous reviewers -- your peers in your field reviewing the evidence, reviewing the data and determining whether the conclusions are sound, whether the methodology is -- is sound. And it's an important -- peer review is a critical aspect of the scientific enterprise.

Q. Okay. And generally speaking, non-published science is not peer reviewed. Is that correct?

A. Non-published science -- it -- well, to be peer reviewed, and to be accepted into a journal, you need that safeguard to evaluate the evidence. Non-published data, we -- no one ever --

Q. It is unknown?

A. -- it is unknown. It hasn't been peer reviewed. It may be out there, but it's not been peer reviewed.

Q. Okay. And then it looks like, if you

move on to your CV, you get to Page 8, you've written some book chapters, you've written some chapters for some books. Then you participated in two IARC monographs. Is that correct?

A. Correct.

Q. And we have talked about IARC 112, which is the monograph where IARC considered the carcinogencity of glyphosate. Right?

A. Correct.

Q. And then one, looks like you also participated in IARC volume 117 after 112 that did not consider glyphosate. Correct?

A. Correct.

Q. Okay. And I also saw in one of your e-mails that you were invited to sit on the FIFRA scientific advisory panel board by the EPA. Is that correct?

A. Yes. I have served on a FIFRA panel 2005 -- 2006 perhaps. It was on pirethrodes. It wasn't glyphosate related.

Q. Okay. But that's an invitation from the EPA --

A. That was an invitation from the EPA.

Q. Okay. And then it looks like you have gone through -- you have one, two, three, four,

four pages of either current research projects or completed research projects in your CV. Is that correct?

A. Correct.

Q. And then presentations, and meeting abstracts, I counted up sixty-nine, if you totaled your presentations, your abstracts. Does that sound -- you don't have it numbered, but does that sound about right?

A. It sounds appropriate.

Q. Okay. And then you get to the Page 18 of your CV. My CV is only one page by the way. I think I need to beef that up.

But you get to Page 18 and your professional development. And you've got one, two, three, four, five, six, seven, eight courses that you've taken to stay abreast of the current field that you are working in. Correct?

A. Correct.

Q. Okay. Active outside collaborators. I'm guessing those are people that you collaborate with that are outside of Mississippi State University?

A. That's right.

Q. Okay.

A. That's what I mean by that.

Q. And you've got that you collaborate with St. Jude's Children Research in Memphis, Tennessee. Correct?

A. Right.

Q. You collaborate actively with the College of Veterinary Medicine at the University of Georgia. Is that right?

A. Right.

Q. Okay. And then you also collaborate with Jing Xu Academy of Agricultural Sciences in China. Is that correct?

A. Right.

Q. Okay. And then we talk about -- then you talk about your -- the rest of your time, which I guess isn't necessarily the rest, but 15 percent of your time is spent teaching. Is that right?

A. Right.

Q. Okay. And you've talked about all of the graduate courses that you have taught. You have taught a graduate course in the mechanisms of toxic action molecular toxicology. Is that correct?

A. Right.

Q. Okay. You've also taught in organ systems toxicology one and two. Is that correct?

A. Right.

Q. You've taught a course multiple times in the mechanisms of toxic action?

A. Yes.

Q. Correct. And you've taught a course called the current literature in toxicology. Is that right?

A. Right.

Q. Okay. You guest lectured in CVM graduate courses. What's CVM?

A. College of Veterinary Medicine.

Q. Okay. And you lectured -- you guest lectured on pharmicokinetic in a pharmacology course. Is that correct?

A. Right.

Q. And these were all -- these guest lectures were invitations from the regular professor. Right?

A. Right.

Q. Okay. And then if you turn to Page 20, and I won't go through the list, but it looks like you have student and post doctoral advisements on several students that -- through your time as a

professor. Is that right?

A. Right.

Q. I would say a dozen or so. Does that sound right?

A. In that ballpark, yes. Yeah. Uh-huh (affirmative response).

Q. And then we get to your service, which is a -- on Page 21, which is 15 percent of your time as well. And we look at the external review panels that you've been on and you've been on one, two, three, four, five, six, seven, eight, nine external review panels. Does that sound right?

A. Yes.

Q. Okay. And some of those, it says, "That you're an invited member by the NIH study session." What is NIH?

A. Well, National Institutes of Health.

Q. Okay. And you were an invited member to sit on their external review panel when they looked at the systemic injury by environmental exposures. Is that right?

A. Correct.

Q. Okay. You were also an invited member of the Agricultural Health Study National Advisory panel in Maryland. Is that right?

A. Correct.
Q. And we've talked about that this morning. Is that correct?
A. Yes.
Q. In fact, you only went to one meeting -- testified --
A. It was March 1st through 2nd of 2012.
Q. And then you have a list of the review editorial board that you sit on for journals.
And it looks like that there are -- I didn't count those up but it looks like there are a lot of those that you sit on. Is that right?
A. Yeah. These are primarily as peer reviewer for all of these journals.
Q. Okay.
A. I am on the editorial board of journal called Toxics.
Q. Okay. So in parenthesis, does that mean how many times you've peer reviewed?
A. Yeah. That's -- yeah. That -- yeah. Roughly determines how many times I've reviewed for each of these journals.
Q. Okay. So I see numbers like one, four, two, sixteen, three, but if you add them all up, I

mean, it looks like you peer reviewed 30 or 40 times?

A. Oh, more than -- yeah, more than that.

Q. Fifty times maybe?

A. Yeah.

Q. You peer reviewed a lot of journals. Is that fair to say?

A. Yeah, that -- yeah. Yeah.

Q. Okay. And then you talk about your university service and your department and college service and your clinical diagnostic service and others. And then you give some references. Is that fair to say?

A. Yes.

Q. Okay. So after reviewing your CV, I think it's fair to say that you are very knowledgeable in molecular toxicology and probably considered an expert in your field?

MR. GRIFFIS: Objection to form. Irrelevant.

BY MS. WAGSTAFF:

A. Yes, I've been invited by panels and to review papers and by NIH study sections.

Q. Okay. So we spent the first five and a half hours of the deposition this morning going

through piece by piece and pulling out of IARC monograph 112 and pulling out certain pieces and analyzing them in isolation. Is that fair?

MR. GRIFFIS: Object to the form.

A. We have looked at various exhibits.

BY MS. WAGSTAFF:

Q. Okay.

A. -- related to volume 112.

Q. But the bottom line is that the IARC 112 determination was made by looking at the totality of the evidence. Is that fair?

A. Yes.

Q. Okay. And you would agree with me that there is not just one piece of evidence that drove that decision. Is that fair?

A. Correct.

Q. Okay. It was a totality of all of the evidence that was presented to the panel. Is that fair?

A. Correct.

Q. Okay. And you would agree with me, too, that the subgroup that you belonged to, which was the mechanism group for subgroup, also looked at the totality of the available evidence. Correct?

MR. GRIFFIS: Object to the form and

contrary to the testimony.

A. Looked at the totality of the peer reviewed publicly available evidence for mechanisms and toxicokinetics.

BY MS. WAGSTAFF:

Q. Sure. So if you look -- so you would agree me then that subgroup four, in determining that there was a strong association, looked at the totality of the toxickinetic evidence and also the totality of the evidence that was allowed to be looked at -- strike that. That was a horrible question.

So you would agree with me that work -- that subgroup four, in making its determination of a strong association, looked at the totality of the toxicologic evidence, as well as the published peer reviewed literature?

MR. GRIFFIS: Objection to form.

Contrary to prior testimony.

A. It would -- I wouldn't strong association it. There was strong evidence for genotoxicity. There was strong evidence for oxidated stress. Two of the ten characteristics.

BY MS. WAGSTAFF:

Q. You're. And I stand corrected by saying

that.

So you would agree with me that when the subgroup four found strong evidence for genotoxicity and when subgroup four found strong evidence for oxidated stress, that subgroup four looked at the totality of the available evidence --

A. Yes.

Q. -- in making that determination?

MR. GRIFFIS: Object to the form. Contrary to in regarding available evidence.

A. Yes.

BY MS. WAGSTAFF:

Q. And you would agree with me that the available evidence includes the evidence as allowed by the preamble of the mon -- of IARC's monograph. Correct?

A. Yes.

Q. Okay. And you would also agree with me that there wasn't one particular piece of evidence that drove either of those determinations. Correct?

A. For oxidative stress and genotoxicity, no. It's not one study that drives it.

Q. Okay.

A. It's the totality of -- the overall coherence of the data basis.

Q. Okay. Excellent. And in looking at the totality of the evidence, working group -- IARC working group 112 found that glyphosate was a category 2 A probable carcinogen. Correct?

A. Yes.

Q. Okay. And that was unanimous vote by all working members. Correct?

A. Yes, it was unanimous.

Q. Okay. And similarly, the subgroup fours vote to make a strong -- showing of strong evidence for genotoxicity and for oxidative stress was also unanimous. Correct?

A. Yes. With an IARC, yes, it was.

Q. Within your group?

A. Within our subgroup.

Q. And can you explain for the jury, sort of in laymen's term, what oxidative stress means?

A. Yes. So oxidative stress refers to molecules that have unpaired electrons that are highly reactive and that can damage cellular macromolecule, such as lipids, proteins and nucleic acids.

They are produced during normal

cellular respiration. We produce it under normal situations. And in a normal cell, it could be exacerbated by environmental chemicals.

Q. Okay.

A. That is made worse.

Q. Okay. Can you tell me how much money you made for participating in IARC 112 panel review?

A. Oh. We need we -- we were not paid for volume 112. We didn't get paid. We got per diem and we had travel.

Q. So you didn't make any money?

A. We don't make money.

Q. Okay. And have you made any money since on -- from your working on -- strike that.

Let's look at the preamble. I forget which exhibit it's marked. I think it might be 10. Going off memory though. Okay.

MR. WHITE: Yes.

BY MS. WAGSTAFF:

Q. We have spoken a lot today about classifications that certain subgroups have made whether it be limited or whether it be sufficient. And these are definitions that IARC has put into the preamble. And we never went over those

definitions, so I would like to just make sure that the jury understands what IARC means when something is labeled limited or sufficient.

So if you could turn please to page -- of the preamble, if you could, please, turn to Page 19. And this is a section called evaluation and rationale. Right?

A. Okay.

Q. Okay. So we're looking at A, which is the carcinogenicity in humans. Correct?

A. Yes.

Q. Okay. And when something -- and this is also referred to as the epidemiology group. Correct?

A. Correct.

Q. Okay. And when something is limited evidence, when the epidemiology group labels it limited evidence, do you -- are you following with me on this?

A. Uh-huh (affirmative response).

Q. The actual -- the subgroup actually finds a positive association between exposure to the agent of cancer for which a causal interpretation is considered by the working group to be credible. Did I read that correctly?

MR. GRIFFIS: Objection. Beyond scope of this deposition.

A. That is correct.

MR. WAGSTAFF: I cross-noticed this deposition, so I get to ask questions but --

MR. GRIFFIS: I'm not talking about my scope. I'm talking about the discovery scope.

BY MS. WAGSTAFF:

Q. Okay. So, in fact, when the epidemiology group identify -- or classifies something as limited evidence, they've actually found a positive association that they find credible. Is that fair?

MR. GRIFFIS: Objection. Beyond the scope of this deposition and beyond Dr. Ross's knowledge since only working in group four, he testified many times.

A. But this is what is in the IARC preamble.

BY MS. WAGSTAFF:

Q. So that's fair.

A. It's in the preamble.

Q. Okay. So then if you move on, and you if you look down to B, which is the

carcinogenicity in experimental animals. Right? So now we're in the animal subgroup. We're still on Page 20.

Oh, and just to be complete on -- let me go back up. To be complete on the limited evidence in the epidemiology group, the definition is written in the preamble is a positive association has been observed between exposure to the agent, which in this case is glyphosate, and cancer for which a causal interpretation is considered by the working group to be credible, but chance bias or confounding could not be ruled out with reasonable confidence.

Did I read that correctly?

MR. GRIFFIS: Objection. Beyond the designated scope set by Judge Charbrio, beyond this witness' knowledge given his prior testimony.

A. That's what written.

BY MS. WAGSTAFF:

Q. Did I read that -- okay?

A. That is correct. It is written in the preamble.

Q. Okay. Excellent. And so if you move down to B where you look at the carcinogenicity in

experimental animals, in fact, working group 112 labeled it sufficient evidence. Is that correct? That was the final determination by the animal group?

A. Sufficient evidence.

Q. Okay.

A. Yes.

Q. And so can you read into the jury what -- what that means?

MR. GRIFFIS: Objection. Beyond the scope of this deposition as found by Judge Charbrio, beyond this witness' knowledge given his prior testimony.

A. Well, you know for from.

BY MS. WAGSTAFF:

Q. Read it.

A. From the preamble, "The working group considers that a causal relationship has been established between the agent and an increased incidents of malignant neoplasms or of an appropriate combination of benign and malignant neoplasms in A, two or more of species of animals or, B, two or more independent studies in one species carried out at different times or in different laboratories or under different

protocols." Should I read more?

Q. Nope. That's good.

And then if you look at -- there is a lot of discussion this morning with Mr. Griffis between the animal group determining whether to call it limited evidence or sufficient evidence. Do you remember that?

A. Yes.

Q. Testimony. Okay. So see let's look and see what definition means of limited evidence by the animal group. Okay. If you could please read that into the record on Page 21.

MR. GRIFFIS: Same objection as previously regarding scope. And this witness' testimony, he wasn't involved in any of those working groups. Three -- subgroup 3, also, just reading, a document speaks for itself.

BY MS. WAGSTAFF:

Q. Go ahead.

A. So this is from the preamble. "The data suggests a carcinogenic effect" --

Q. Okay. Hang on real quick. So limited evidence of carcinogenicity by the animal group still means that the data suggests a carcinogenic

effect. Right?

MR. GRIFFIS: Objection --

BY MS. WAGSTAFF:

Q. Keep going.

A. "But are limited for making a definitive evaluation because, A, the evidence of carcinogenicity is restricted to a similar experiment; B, there are unresolved questions regarding the adequacy of the design conduct or interpretation of the studies; C, the agent increases the incidents only of benign neoplasms or lesions of uncertain neoplasm potential or, D, the evidence of carcinogencity is restricted to studies that demonstrate only promoting activity in a narrow range of issues or organs.

Q. Okay. Excellent. You can put the preamble away. I think am done with questions about that for right now.

And I'd like to introduce as an exhibit -- are we on 26?

(Exhibit No. 13-26 marked for identification.)

Q. 26. Okay. The list of participants that you have referenced numerous times this morning. So this was the list of participants.

Correct?

A. Yes.

Q. Okay. This was the entire list of participants from the working group. Is that right?

A. Yes.

Q. Okay. And there you are, about three quarters of way down, Matthew K. Ross, Mississippi State University, United States of America. Is that right?

A. Correct.

Q. Okay. And if you go all the way down, invited specialist, there's Dr. Christopher Portier that we talked about numerous times today. Right?

A. Yes.

Q. And then if you go all the way down to the very bottom of the page, is Dr. Portier's conflict -- potential conflict of interest disclosure that you had referenced earlier today. Right?

A. Yes.

Q. Okay. And if you turn the page -- actually before you turn the page, it looks like within this -- this group, there's also a member

from the United States EPA, Matthew T. Martin. Is that correct?

A. Yes. He's one of the members.

Q. Okay. So is he doctor? Is it Dr. Martin?

A. Yes.

Q. Okay. So Dr. Martin was participating in monograph 112 as a member of the EPA. Is that correct?

MR. GRIFFIS: Object to the form.

False.

A. He was -- he was member of the subgroup four. He was -- he was -- he was an employee of U.S. EPA.

BY MS. WAGSTAFF:

Q. Let me strike that.

And so Matthew T. Martin, while he was participating in monograph 112, was an employee of the United States EPA. Is that correct?

MR. GRIFFIS: Object to the form.

A. Yes. He was an employee of U.S. EPA.

BY MS. WAGSTAFF:

Q. And here on this list of participants, Matthew T. Martin is listed as being associated in

some way with the United States EPA. Is that correct?

A. Yes.

Q. Okay. And, in fact, Matthew T. Martin was part of the mechanism subgroup four that you are part of. Correct?

A. Correct.

Q. And that Matthew T. Martin, the United States EPA employee, was part of the subgroup that found a strong association with genotoxic and oxidative stress. Is that correct?

MR. GRIFFIS: Objection to the form. The bold -- at the top says these people not serving in any way representative of their governmental organizational which they are affiliated.

BY MS. WAGSTAFF:

Q. Is that correct?

A. He was a member of subgroup four.

Q. And subgroup four was the subgroup that found that there is a strong evidence for genotoxicity and for oxidative stress of glyphosate. Is that correct?

A. Yes.

Q. Okay. And so if you turn the page --

excuse me -- to the next page, it looks like representatives of national and international health agencies are listed there as well. And then you have observers and it look -- if you look a few down, it looks like Thomas Sorahan was there for Monsanto Company. Is that correct?

A. Yes.

Q. Okay. So Monsanto had an observer there during the working group. Is that correct?

A. Yes.

Q. Okay. Do you know Mr. Sorahan?

A. I do not know him.

Q. Okay. It looks -- if you look down at number four, it looks like he had said that he is a member of the European glyphosate toxicology advisory panel and received reimbursement of travel cost from Monsanto to attend Eurotox 2012. Do you see that?

A. Yes.

Q. Okay. And he's listed as being associated with Monsanto company in this participant list. Is that correct?

A. As an observer.

Q. Okay. And did -- were you aware that he was reporting back to Monsanto throughout the

course of the monograph working group?

MR. GRIFFIS: Objection. Foundation.

A. I wasn't aware of his communications.

(Exhibit No. 13-27 marked for identification.)

BY MS. WAGSTAFF:

Q. Okay. So I'm going to hand you an e-mail which is marked confidential, but it has already been publicly disclosed, so you don't need to sign a protective order.

But if you look at the second page, do you know who Donna Farmer is? You go to the bottom of the cascade. Yeah. Okay.

A. Where is she from? She's a Monsanto employee. I don't know Donna Farmer.

Q. Well, you see that her e-mail is donnafarmerat@ Monsanto.com?

A. Yes.

Q. That would suggest she is affiliated with and an employee of Monsanto?

MR. GRIFFIS: Objection. Foundation. Beyond the scope of this deposition as designated by Judge Charbrio.

BY MS. WAGSTAFF:

Q. I will represent to you that she is a

Monsanto employee. Do you have any reason to doubt that?

A. No.

Q. Okay. And so she is writing to Thomas Sorahan, the Monsanto observer, the working group 112. Correct?

A. Yes.

Q. And this is on March 14th, which was a couple of days after the -- if I recall correctly the working group concluded on the tenth and/or 11th of March of 2015?

A. Tuesday -- I don't have the time line in front of me. I think that's the 10th.

Q. Okay. And so she -- so -- so Dr. Farmer asked Thomas Sorahan, as well with Christian Strupp, Matt Jensen and Bill Heydens, about the IARC findings at a CLA meeting on Thursday. And if you look at -- this e-mail is from Thomas Sorahan, if you look at the front page, when he is writing back to her.

MR. GRIFFIS: Objection as to any questions about this document. The witness was not on the document in any way. He's never seen it before. There's no foundation for its relevance. And this is beyond the

scope that was set by Judge Charbrio.

BY MS. WAGSTAFF:

Q. Okay.

A. I need to read this.

Q. Sure.

A. I haven't had a chance to read this.

Q. No problem.

A. From Donna Farmer. Just let me...

Q. No problem. Okay.

A. Okay.

Q. Ready?

A. Yes.

Q. Okay. So it looks like Donna Farmer was writing to some folks wondering why the information was released about the 2 A classification of glyphosate. Right?

MR. GRIFFIS: Objection. This is utterly speculative. This is a document that this witness has nothing to do with. He had to read it the first time. So question -- these questions would be better directed to Donna Farmer -- would have been deposed. This is just an attempt to put into evidence things that have nothing to do with this witness. Beyond the scope set by the judge.

BY MS. WAGSTAFF:

Q. All right. And I don't necessarily care about your answer to that question, so I can strike it if you want.

MR. GRIFFIS: I'll have the same objection to every question that you have about this document which has nothing do with --

MS. WAGSTAFF: I will tie it in. Don't worry.

BY MS. WAGSTAFF:

Q. So we've talked about the methodology of -- we spent the day talking about the methodology of monograph 112, and Monsanto's attorneys have done everything they possibly can do to try to knock down the creditability of monograph 112, so I'm tying this in to show what one of Monsanto's own employees said about the methodology of 112. And if you will let me finish my questions, I will tie that in. So, if you --

MR. GRIFFIS: Objection. Argumentative. Misrepresents the prior testimony. Misrepresents the course of this deposition. Demonstrates the improper use of the document. Witness -- nothing to do with this

document.

BY MS. WAGSTAFF:

Q. Okay. So it looks like Tom Sorahan, who was there as an observer for Monsanto, writes to Dr. Farmer and says, in the second paragraph, quote, "I know of -- I do know of instances where observers at IARC felt they had been treated rudely or briskly at monograph meetings. That was not the case for me at volume 112. I found the chair, subchairs and invited experts to be friendly and prepared to respond all comments I made." Do you see that?

A. Yes.

MR. GRIFFIS: Objection. Irrelevant --

BY MS. WAGSTAFF:

Q. Was that your experience --

MR. GRIFFIS: -- witness.

BY MS. WAGSTAFF:

Q. Was that your experience at monograph 112?

MR. GRIFFIS: Objection. Totally irrelevant. He wasn't there as an observer.

A. So what the question is -- what's -- ask me the question again.

BY MS. WAGSTAFF:

Q. Sure. The question is, did you feel that the chair and the subchairs and the invited experts were prepared to respond to all comments by the observers?

MR. GRIFFIS: Objection. No foundation. Observers -- or know how the observers were treated.

MR. WHITE: I will advise, Dr. Ross, again, that you only have to answer to the extent that you have actual knowledge.

A. I thought they were cordial.

BY MS. WAGSTAFF:

Q. Okay. And then if you look at the next paragraph, it says, "In my opinion, the meeting followed the IARC guidelines." Would you agree with that?

MR. GRIFFIS: Objection. This document is irrelevant to any issue that is relevant to the scope set by the judge. He's never seen it before. And it's not -- proper witnesses have already been deposed.

A. Yes. I felt the guidelines were followed.

BY MS. WAGSTAFF:

Q. Excellent. And then I'd actually like

to pull out Exhibit 13 that Monsanto's attorney marked this morning, please. Okay.

All right. So this is an e-mail that Monsanto's marked as an exhibit to this deposition. So I'd like to actually walk through what -- the genesis of this e-mail. If you need to take a minute to look at it please, please do. Tell me when you are ready.

A. Okay.

Q. Okay. So please tell the ladies and gentlemen of the jury who Katherine Guyton is.

A. Dr. Guyton was the responsible officer employed by IARC for the meeting.

Q. Okay. And so it looks like on this cascade if you go to -- up in the very top left when it says 5039. Looks like the last couple of pages are just signature blocks. So this e-mail starts -- you know, e-mails are kind of funky because they go backwards.

But this e-mail cascade starts it looks like on February 3rd of 2015. Correct?

A. Yes.

Q. Okay. And it looks like Donna Farmer and here's actually you can see -- there's her signature line, so you can actually see now who

Donna Farmer is -- on the toxicology or the product protection and nutrition lead for the toxicology nutrition center at Monsanto. You see that?

A. Yes.

Q. Okay. And so it looks like Donna Farmer, on February 3rd of 2015, is sending a list of material to the -- what was Dr. Guyton's role again? The --

A. She was the responsible officer for volume 112.

Q. Okay. So it looks like Dr. Farmer, on February 3rd, is actually sending material to the responsible officer of monograph 112 to be considered for the meeting. Is that -- and it looks like she is -- she is actually also sending it to an e-mail entitled monograph 112 at IARC.fr. Do you see that?

A. Yes.

Q. Okay. This was about -- about a month before the IARC met, the IARC committee members met in Lyon, France. Is that right?

A. Yes.

Q. Okay. And later that day, Dr. Guyton responds and says thank you for the information.

We will provide the appropriate scientific articles to the working group. Do you see that?

A. Yes.

Q. Okay. And then if you move to the next portion of the cascade, it looks like a few days later, Dr. Farmer from Monsanto again follows up with the -- Dr. Guyton from IARC and requests that confirmation that she received her e-mail and then she says, if you look at the bottom of the first paragraph, "I have also had a Kingston Flash drive with the zip files sent to you via FedEx international priority, which would be there typically in two business days." You see that?

A. Yes.

Q. Okay. So it looks like Monsanto was following up again and now they have priority two-day airmailed information and articles to IARC 112. Is that right?

A. Yes.

Q. Okay. And so then if you -- then if you keep going, you look at February 26th, which is one day later, so three weeks later, Donna Farmer from Monsanto again is writing to Dr. Guyton and giving additional information for the monograph 112. Is this correct?

A. Yes.

Q. So it's fair to say that Monsanto provided information to monograph 112 to be considered. Is that right?

A. It appears that they were sending information to IARC.

Q. Okay. And so if you look now -- this is where I'm going to start to bounce around a little. If you could look at the actual monograph, which I believe was -- I'm not sure -- what exhibit number was that.

MR. WHITE: 19.

BY MS. WAGSTAFF:

Q. 19. Okay. And if you turn to Page 46.

(Exhibit No. 13-27 marked for identification.)

BY MS. WAGSTAFF:

Q. Okay. Are you on Page 46?

A. Yes.

Q. Okay. And this is actually -- I'm sorry. Turn to Page 45. This is where the IARC actually talks about the Bolognesi paper that you spent some time talking about with Monsanto's attorney. Do you remember that?

A. Yes.

Q. Okay. And now I just wanted to show you -- put into prospective where we were. You see Bolognesi, et al, 2009 in the right hand column of Page 45?

A. Yes.

Q. Okay. And that's a discussion in the IARC -- the final IARC manuscript about that paper that you had discussed. Correct?

A. Yes.

Q. So if you turn now to Page 46, I just wanted to -- just wanted to confirm that some of the language that Monsanto's attorney was reading to you about the Bolognesi paper did in fact make its way into the monograph 112 paper as it was considered within the final evaluation. And where I would point your direction -- point your attention to is where it says, "However, comma, the increased infrequency of micronucleus formation."

And that is the language that you were discussing with Monsanto's attorney earlier. Correct?

A. Yes.

Q. Okay. So that information was considered and actually made it into the published

final documents. Is that correct? That's what we're reading, the final document. Right?

A. Yes. This, yes.

Q. So that information was considered in totality of the evidence in making the determination. Correct?

A. The issue -- this was the -- the point that was raised earlier about micronucleus formation observed immediately after Spring was not consistent with the rate of application used in the regions. So this is the -- the issue that was brought up by the Monsanto attorney.

Q. Right. And so --

A. And I made the point that that information is in the monograph.

Q. Excellent. So my question to you is -- and so -- by -- this may seem sort of self-explanatory. But by virtue of it being in the monograph final published paper, that suggests that it was, in fact, considered in the totality of the evidence determination that both the subgroup four and monograph 112 made. Is that correct?

A. Yes.

Q. Okay. And then I'd like to -- okay.

Okay. I'd like to --

MS. WAGSTAFF: This is actually highlighted so I'm only going to give you guys one copy.

BY MS. WAGSTAFF:

Q. Okay. This is an article that is from Bolognesi in 2010. And if you turn to -- this was produced to us by Monsanto, which is why they are Bates labeled below. But if you turn to the end of the Bates labels being 294, last three -- 294. Okay.

And on the left hand column, the end of the first paragraph, it says, "Results showed significant increase in MN frequency after glyphosate exposure, mainly when it is applied for maturation of sugar cane."

A. I've just got to find where you are at here.

Q. You want to look at -- where I highlighted, it will help.

MR. GRIFFIS: Object. The question about this study which is not one that foundation -- been laid was considered by the witness or anyone else in connection with group four deliberations.

A. Let me just read through this.
MR. GRIFFIS: Calls for expert testimony.
A. Let me just read this paragraph here.
BY MS. WAGSTAFF:
Q. Sure.
A. Okay. I've read it.
Q. All right. So do you see where it says, "Results showed significant increases in MN frequency after glyphosate exposure, comma, mainly when it is applied for maturation of sugar cane." Do you see that?
MR. GRIFFIS: Same objection. It is beyond the scope set by Judge Charbrio. Asking this witness to make comments, extra testimony on study unrelated to the glyphosate 112 monograph.
A. I see -- I see that.
BY MS. WAGSTAFF:
Q. Okay. And this is the same Bolognesi who wrote the article in 2009. Correct?
MR. GRIFFIS: Same objection.
A. I believe so.
BY MS. WAGSTAFF:
Q. Okay. Put that aside.

Do you know a Dr. Jim Perry?

A. No.

Q. Okay. Do you know if during the IARC monograph 112 meeting that the panelists considered Dr. Perry's report that he commissioned for Monsanto?

MR. GRIFFIS: Objection. Irrelevant beyond the scope of this deposition.

A. I am unfamiliar with the name and any data he -- any report he was commissioned.

BY MS. WAGSTAFF:

Q. Okay. And so earlier today, Monsanto's attorneys tried to whittle down the amount of time that y'all spent on this monograph. And they were trying to suggest that you spent 20 percent of a week on the glyphosate monograph. Did you remember that testimony?

MR. GRIFFIS: Object. Unfair characterization -- Dr. Ross who said 20 percent.

A. I remember the testimony.

BY MS. WAGSTAFF:

Q. Okay. But this is all related to work that you do every day. Correct?

MR. GRIFFIS: Objection. Vague.

Q. I'll strike that.

A. Rephrase your question. In terms of juggling acts?

BY MS. WAGSTAFF:

Q. No. I will rephrase. Okay.

An hour that you spend --

A. Yes.

Q. -- with your expertise, education wise and experience is different than an hour that someone without that expertise spends on this type of work. Correct?

A. Yes. Yeah, it's fair to say.

Q. Okay. I don't have any advance degrees in chemistry, toxicology or any of the things on your CV. So I'm guessing that an hour that you spend on that is way more productive than an hour I spend on that. Is that correct?

MR. GRIFFIS: Objection. Vague.

A. I would, yes.

BY MS. WAGSTAFF:

Q. It's fair to say that.

Okay. I told you that we weren't going to have any more questions on the preamble, but I do have one more question. If you could please pull that up. Which I believe is Exhibit

10.

A. 10.

Q. 10.

A. Okay.

Q. Okay. Can you point to me the place in the preamble where it says that the procedure that the IARC members follow must be a procedure set forth in a peer reviewed public literature? And I'm not talking about the data that you -- that you need to analyze.

I want to know where in the preamble it says that the procedure followed must be that within a published literature. And I will submit to you that I don't think that it does say that.

MR. GRIFFIS: Objection. Relevance.

A. Looking for peer reviewed public literature?

BY MS. WAGSTAFF:

Q. No. I am -- so I know that the preamble says that the IARC panelists must consider -- the data it must consider must be published literature available in the public domain. I know that. I'm just wondering -- the procedure I'm actually talking about, the ten factors that we talked

about that the mechanism group looked at.

Monsanto's attorney seemed to make a distinction that the procedure wasn't in published literature until after the monograph happened. So I'm wondering, is there anything in the preamble that requires your procedure to be in published data?

A. Okay. Right. I got you, what you're saying now.

Yeah. So in the -- in the preamble, under the mechanistic and other relevant data, section four, there's nothing in the preamble that states that examining the 10 key characteristics that that evaluation was published. There is nothing in there about that.

Q. Okay. And there's nothing in there that says that for procedures go, in any procedures --

A. As a procedural matter.

Q. Yeah. Okay. In fact, genotoxic and oxidated stress were known causes of cancer in the peer review literature prior to IARC. Right?

MR. GRIFFIS: Objection.

Mischaracterized the testimony.

BY MS. WAGSTAFF:

Q. Okay. Let me ask you -- let me restate

that. Prior to -- that was a bad question. Okay.

Prior to monograph 112, okay, so we're going right before that. The peer review literature recognized genotoxicity and oxidative stress as causes of cancer. Correct?

A. There were studies that indicated genotoxicity and oxidated stress by glyphosate -- caused by glyphosate.

Q. Okay. Thanks. And as much as Monsanto tried this morning to make IARC 112 and subgroup 4 the Dr. Ross show, it wasn't. It was a team effort. Right?

MR. GRIFFIS: Objection to the characterization. Misstates the whole day.

A. Yeah.

BY MS. WAGSTAFF:

Q. Mean your --

A. Yeah. I had -- my main focus in this monograph was to evaluate the toxicokinetic data for glyphosate and the other four compounds. It was to evaluate the toxicokinetic data and report on that and be a member of the subgroup four mechanistic, mechanisms subgroup.

Q. Okay. Excellent. And your co-subgroup members are experts in their own right. Correct?

A. Yes.

Q. I mean to get up to become a member of an IARC panel, you must be an expert of some sort?

A. Yes.

MR. GRIFFIS: Objection. Beyond Dr. Ross's knowledge. Foundation.

BY MS. WAGSTAFF:

Q. And so -- and so it is absolutely appropriate, you would agree with me, that you rely on your comembers analyses of studies. Correct?

A. Yes. That's very important.

Q. Right. I mean they didn't -- no one called up Dr. Ross and said, Dr. Ross, make this opinion all by yourself. Correct?

A. Right.

Q. Okay. And so it's very appropriate, you would agree, that you didn't read every single article, and, in fact, relied on your co-panelist, who are who co-experts in their analyses? Correct?

A. Yes.

Q. There's nothing abnormal about that. Correct?

A. No.

Q. And that is, in fact, what you do in the scientific world in a setting like this. Correct?

A. Correct. Absolutely.

Q. Okay.

MS. WAGSTAFF: Let's take like a two or three minute break. I may be done. Real quick. I just want to talk with Jeff.

VIDEOGRAPHER: Off the record at 5:46.

(A short recess was taken.)

(Exhibit No. 13-28 and Exhibit No. 13-29 marked for identification.)

VIDEOGRAPHER: Back on record at 5:53.

BY MS. WAGSTAFF:

Q. All right. I'm going to try to wrap this up in just a few minutes.

Why did you participate? Why -- strike that. Why did you agree to participate in monograph 112?

A. I have a lot of background in research experience in pesticide metabolism, pharmicokinetic, organophosphorus, pesticides in particular. So I felt I was -- I was well qualified to serve on the panel.

Q. And did you consider the invitation a prestigious invitation?

A. Yes.

Q. Okay. And would you agree with me that scientific debate is a good thing?

A. Yes.

Q. Okay. I'm going to hand you as my hopefully last exhibit of the day, a document that Monsanto's attorney referenced this morning and it may actually be an exhibit. I'm not sure if you actually marked it as an exhibit.

I tucked under here -- can I have one of those copies back? Sorry.

This is an article that was published in a journal. Correct?

A. Yes.

Q. Okay. And it looks like it was -- there are 94 authors of this article. Right?

A. Yes.

Q. And you are number -- you are in there.

A. Yep.

Q. You're number --

A. 68.

Q. 68th, correct? You're the 68th author. And are you familiar with the contents of this article?

A. Yes.

Q. Okay. And as we sit here today, do you still stand by the contents of this article?

A. Yes.

MR. GRIFFIS: Objection. It is irrelevant to this deposition. And this article you objected to on the grounds that it postdated IARC beyond the scope of the judge's designation extent that is correct, your questions are out, too.

BY MS. WAGSTAFF:

Q. And is anything -- strike that.

In March of 2015, you believed based on the totality of the evidence that glyphosate was a probable carcinogen. Is that correct?

MR. GRIFFIS: Objection. Misrepresents the record.

MR. WHITE: You can answer within the scope of the IARC. You don't have to give a personal opinion.

A. The monograph, I think, speaks for itself. I was a member of the volume 112 team. And it was classified 2 A.

BY MS. WAGSTAFF:

Q. Okay. And is anything -- was anything

that was said today changed your mind on the decision that monograph 112 panelist came to?

A. No.

Q. Okay. Thank you. No further questions.

VIDEOGRAPHER: Off record.

(A short recess was taken.)

VIDEOGRAPHER: Back on record.

EXAMINATION BY MR. GRIFFIS:

Q. Sir, thank you for your time today. I have a few more questions on the subject of peer review.

There's a difference in the field of academic science, sort of science that you are normally involved in between peer reviewed and non-peer reviewed studies. Right?

A. There is a difference.

Q. The peer reviewed studies tend to be the better studies because they are good enough that they can be submitted to journals or good enough that when your peers look at them, they give sufficiently favorable reviews the journal would publish them. Correct?

A. The peer reviews system acts as a gatekeeper in a way. Quality control mechanism.

Q. And it's certainly not a single unitary

gate. Is that right? And what I mean by that, sir, is that there are journals of varying qualities and there are peer review processes of varying degrees of rigor?

A. I would -- yes, I would agree with that.

Q. There are some journals that are very prestigious, and you know that if something is published in one of those journals, it has been through a pretty good peer review process.

In contrast, there are some journals that aren't so prestigious and you may not have such confidence in the peer review process that things that are published and have gone to; is that fair?

MS. WAGSTAFF: Objection. Foundation.

A. So I don't completely agree with that.

BY MR. GRIFFIS:

Q. Tell me why.

A. Because you're assuming that what you think is a lower tiered journal with a low impact factor, every peer review of that article that comes through there is -- is flawed. And I don't think that's the case.

Q. I didn't mean to put those words into your head at all, sir. There are -- just that

there is certainly, in your mind, a hierarchy of journals and hierarchy of rigor of peer review. It may not be from good to bad, but from good to less good?

A. Yeah. We call those impact factors. The type of journal that we consider of high quality, high level versus lower impact factor journals.

Q. Now, the unpublished data, the stuff that is produced by academic scientists that doesn't get published, that hasn't necessarily been through any sort of review process or auditing process or procedure to make sure that it's good science. Is that fair?

MS. WAGSTAFF: Objection.

A. Unpublished -- unpublished data essentially doesn't exist in academic science. It doesn't exist. If it's not published, it doesn't exist. In the academic world --

BY MR. GRIFFIS:

Q. Academics. It may as well not exist, is that what you mean?

A. That's right.

Q. I mean, it does actually --

A. Sure.

Q. -- existence --

A. Doesn't exist because it's not in the peer reviewed published, published literature.

Q. It doesn't count for you. You don't consider it?

A. Yes.

Q. Okay.

A. It -- yes.

Q. You didn't mean that such things didn't happen? Certainly, there are studies that don't ever get published because they are not good enough. That's fair?

A. There are studies that don't get published because they are not good enough? Did they go through peer review or did they -- depends on did they go through peer review system.

Q. Right. So my --

A. And someone may have found a flaw in the analysis.

Q. I would like to talk about good laboratory practices, studies that are done under good laboratory practices, by contrast with unpublished academic things.

A. Uh-huh (affirmative response).

Q. That you said may as well not exist for

purposes of what academic scientist consider to be valuable information. GLP labs are certified by the government. Correct?

A. To my knowledge, they are.

Q. They go through a rigorous certification process. True?

MS. WAGSTAFF: Object to the form. Using the word "rigorous."

A. I believe so. You know. Working in a GPL, I know there are steps they have to take.

BY MR. GRIFFIS:

Q. There are multiple levels of audits, both audits by internal auditors and the auditors and the lab are also audited by external auditors. Correct?

A. Yes.

Q. Okay. Data collection analysis, statistical review of the data, all of that is prescribed and regimented and controlled by the GLP regulations. Correct?

A. Since I don't work in GLP, it was a long time ago, I can't really address the specifics of what is involved in the GLP studies.

Q. Okay. But you know that there are a large number of regulations about how the

laboratory conducts its practice about the collection of data and so on. You don't know exactly what those are?

MS. WAGSTAFF: Object to foundation.

A. Yes. I think so. I don't know all of the details about GLP. But -- but they are, I'm sure, because I worked in it, there are things that we have to do.

BY MR. GRIFFIS:

Q. Do you know, for example, that GLP regulations require that before a study can be conducted, the study plan, the methodology to be used, need to be written down?

A. Yes. I am aware of that.

Q. So, in academic medicine, you may or may not have a prior plan. It would be best practice to have a prior plan, but you may not. But in a GLP lab, you have to have a prior plan; that's the rule. Right?

A. Again, I'm not an expert in GLP.

Q. Okay. Do you know, sir, that GLP labs are -- there are guarantees built into the process, as a whole point of GLP, as to the methodology that's followed and that the methodology that was set out in advance was in

fact followed?

MS. WAGSTAFF: Object to the foundation of -- and the word of the use of word guarantees. There is no guarantee in that I don't think. So form and foundation.

BY MR. GRIFFIS:

Q. Go ahead, sir.

A. I don't know all of the details of the GLP requirements, and what's involved in that.

Q. Okay. Do you know -- are you familiar, sir, that in addition to GLP certification and the instance of GLP lab, companies like Monsanto are very heavily regulated with regard to the science that they generate?

MS. WAGSTAFF: Object to foundation.

A. I would presume if they are trying to get their products registered by EPA, they are -- they are regulated.

BY MR. GRIFFIS:

Q. Are you aware that EPA and other regulators in other countries set forth a list of the experiments that must be done to establish the safety and efficacy of products that are submitted for registration by companies like Monsanto?

MS. WAGSTAFF: Object to the foundation.

Form and scope of the question.

A. I don't know all of the regulatory tests that are prescribed, but I'm aware that there are some for sure. I don't know all of the details.

BY MR. GRIFFIS:

Q. You don't know which tests are prescribed, but you do know that some are?

A. Clearly. I worked in a contract lab that would have to submit data to a chemical company that would submit it to EPA. So I'm familiar with that.

Q. Okay. When we're talking about the regulatory battery of studies conducted by companies like Monsanto, and other registrants of glyphosate products, we're talking about highly regulated studies with methodologies set forth in advance with bioassays prescribed by the regulators conducted in GLP labs with multiple layers of auditing. Correct?

MS. WAGSTAFF: Object to the foundation. There's no evidence in front of the deponent that any of that is actually an accurate description of the regulation. Object to the form.

A. What is the best way to answer it?

MS. WAGSTAFF: Another objection is he's testified he's not a regulatory expert. So he's just speculating.

A. I know there are requirements that they have to meet for their products to be registered with EPA. I don't know the specific details of it.

BY MR. GRIFFIS:

Q. And the quality and rigor of GLP certified studies conducted for regulatory approval is a completely different universe than that of unpublished studies produced by academic labs. Fair?

A. Unpublished studies?

MS. WAGSTAFF: Object to foundation -- I mean foundation and object to the form. Completely different universe.

A. I don't know. I can't answer that question.

BY MR. GRIFFIS:

Q. There is a world of difference in quality between the two?

A. I would disagree.

Q. You believe the GLPs certified labs produce bad science?

A. No. I didn't say that.
Q. Okay. What do you mean?
A. You implied that unpublished data that an academic scientist might have was performed poorly.
Q. You told me earlier that -- what I was alluding to, sir, you told me a little bit earlier that unpublished data created by academic science doesn't exist, which you didn't quite mean literally. You meant it may as well not exist because it is not even considered. Correct?
A. That's correct.
Q. And by contrast, GLP registration data and both continues to exist and is considered by every regulator in the world in making very important assessments about risk and hazard. Correct?
MS. WAGSTAFF: Object to foundation. Every single regulator in the world relies on GLP and I object to that. Objection to form.
A. I'm not a GLP expert. I know there are very stringent regulations in GLP laboratories. That doesn't mean -- that doesn't necessarily mean that the experiments -- that the data is valid.
I mean, it could be done poorly.

The experiments could still be done poorly in a GLP laboratory, the data quality could still be poor.

BY MR. GRIFFIS:

Q. There are controls to make sure that they aren't, though. Right?

MS. WAGSTAFF: Object to foundation. He said he is not a GLP expert.

A. Yeah. I'm not a GLP expert. Controls are important in science and when studies are peer reviewed, the peer reviewers are looking for whether appropriate controls were utilized in the experiments, whether appropriate quality control aspects were followed.

BY MR. GRIFFIS:

Q. And you don't know if the data is real?

MS. WAGSTAFF: Objection. Argumentative.

A. You don't know if the data is real?

BY MR. GRIFFIS:

Q. Yes, sir.

A. Oh, if -- when you're peer reviewing?

Q. Yes, sir.

A. Oh, you think it could be fabricated? Is that what you're indicating?

Q. It's conceivable on peer review because you aren't auditing the lab, not backing up the scientist in that way. Correct?

MS. WAGSTAFF: Objection. Hypothetical.

MR. WHITE: You don't have to answer any hypotheticals.

BY MR. GRIFFIS:

Q. There aren't controls in academic labs in a systematic way, the way they are in GLP labs to ensure data quality. That's fair to say, right?

MS. WAGSTAFF: Objection. Foundation.

A. Yeah. It's an interesting question because GLP requires a great deal of prescriptions you have to follow. And I'm aware of that.

BY MR. GRIFFIS:

Q. Okay. I will move on from that.

In the preamble, which is Exhibit 10 there. Can you pull it up, please?

A. Preamble?

Q. Yes, sir. Page 20.

MS. WAGSTAFF: Hold on a second.

BY MR. GRIFFIS:

Q. In the description of sufficient evidence of carcinogenicity, do you know why the

preamble calls for studies ideally to be conducted under good laboratory practices?

A. Let me see. I'm going to read, "An increase in the incidents of tumors in both sexes of a single species in a well conducted study ideally conducted under good laboratory practices can also provide sufficient evidence." Do I know why?

Q. Do you know why IARC states that it is willing in some circumstances to rely on a single well conducted study ideally conducted under good laboratory practices? Why it says ideally conducted in good laboratory practices?

A. I don't know if it says single study. Of a single species --

Q. In a well conducted study.

A. Yeah. Again, I'm not an expert in GLP that can answer that question. Why -- I don't think it gets more weight than an academic study -- a GLP study.

Q. IARC says ideally such a study would be conducted under good laboratory practices. Is that right?

A. That's what -- that's what a preamble says, yes.

Q. Thank you for your time today, sir.

MS. WAGSTAFF: No further questions for me.

VIDEOGRAPHER: Off record, 6:11.

(Ended at 6:11 p.m.)

CERTIFICATE OF COURT REPORTER

I, Todd J. Davis, Court Reporter and Notary Public in and for the County of Madison, State of Mississippi, hereby certify that the foregoing pages contain a true and correct transcript of the testimony of MATTHEW K. ROSS, as taken by me in the aforementioned matter at the time and place heretofore stated, as taken by stenotype and later reduced to typewritten form under my supervision to the best of my skill and ability by means of computer-aided transcription.

I further certify that under the authority vested in me by the State of Mississippi that the witness was placed under oath by me to truthfully answer all questions in this matter.

I further certify that I am not in the employ of or related to any counsel or party in this matter and have no interest, monetary or otherwise, in the final outcome of this matter.

Witness my signature and seal this the 5TH day of MAY, 2017.

_____

TODD J. DAVIS, CSR #1406

My Commission Expires:
March 27, 2021

ERRATA SHEET

Case Name:

Deposition Date:

Deponent:

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Signature of Deponent

SUBSCRIBED AND SWORN BEFORE ME

THIS ____ DAY OF _____, 2017.

_____

(Notary Public) MY COMMISSION EXPIRES:_____